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# THE UNIVERSITY OF THE PHILIPPINES

CATALOGUE  
1917-1918

ANNOUNCEMENTS  
1918-1919



THE UNIVERSITY OF THE PHILIPPINES  
BULLETIN NO. 8

MANILA  
BUREAU OF PRINTING  
1918

# **The University of the Philippines**



## **COLLEGE OF LIBERAL ARTS**

**COURSES LEADING TO THE DEGREES OF B. A., B. S., M. A., M. S.**

**COURSE IN COMMERCE**

**COURSES LEADING TO THE DEGREE OF B. S. IN COMMERCE**

**COLLEGE OF EDUCATION**

**COURSES LEADING TO TEACHER'S CERTIFICATE AND TO THE DEGREE OF  
B. S. IN EDUCATION**

## **COLLEGE OF MEDICINE AND SURGERY**

**COURSES LEADING TO THE DEGREES OF M. D., D. D. S., D. T. M., D. P. H.**

**GRADUATE SCHOOL OF TROPICAL MEDICINE AND PUBLIC HEALTH**

**COURSES LEADING TO THE DEGREES OF D. T. M., D. P. H.**

**SCHOOL OF PHARMACY**

**COURSES LEADING TO THE DEGREES OF PH. G. AND B. S. IN PHARMACY**

**SCHOOL OF DENTISTRY**

**COURSES LEADING TO THE DEGREE OF D. D. S.**

## **COLLEGE OF LAW**

**COURSES LEADING TO THE DEGREES OF LL. B., LL. M.**

## **COLLEGE OF AGRICULTURE**

**COURSES LEADING TO THE DEGREES OF B. AGR., B. S. AGR., M. S.**

## **COLLEGE OF ENGINEERING**

**COURSES LEADING TO THE DEGREES OF B. S. (C. E.), B. S. (M. E.), B. S. (E. E.), B. S. (MIN.), M. S. (C. E.), M. S. (M. E.), M. S. (E. E.), AND  
M. S. (MIN.)**

## **COLLEGE OF VETERINARY SCIENCE**

**COURSES LEADING TO THE DEGREE OF D. V. M.**

## **SCHOOL OF FORESTRY**

**COURSES LEADING TO THE DEGREE OF B. S. F.**

## **SCHOOL OF FINE ARTS**

**COURSES IN PAINTING, SCULPTURE AND ENGRAVING**

**CONSERVATORY OF MUSIC**

**COURSES IN PIANOFORTE, ORGAN, VOICE, ORCHESTRAL INSTRUMENTS,  
VIOLIN, THEORY**

# THE UNIVERSITY OF THE PHILIPPINES

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1918

JANUARY							MAY							SEPTEMBER						
S.	M.	T.	W.	T.	F.	S.	S.	M.	T.	W.	T.	F.	S.	S.	M.	T.	W.	T.	F.	S.
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13	14	15	16	17	18	19	12	13	14	15	16	17	18	15	16	17	18	19	20	21
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27	28	29	30	31	—	—	26	27	28	29	*	31	—	29	30	—	—	—	—	—
FEBRUARY							JUNE							OCTOBER						
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10	11	12	13	14	15	16	9	10	11	12	13	14	15	13	14	15	16	17	18	19
17	18	19	20	21	*	23	16	17	18	19	20	21	22	20	21	22	23	24	25	26
24	25	26	27	28	—	—	23	24	25	26	27	28	29	27	28	29	30	31	—	—
MARCH							JULY							NOVEMBER						
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24	25	26	27	*	*	30	28	29	30	31	—	—	—	24	25	26	27	*	29	30
31	—	—	—	—	—	—														
APRIL							AUGUST							DECEMBER						
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7	8	9	10	11	12	13	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	*	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	*	26	27	28
28	29	30	—	—	—	—	25	26	27	28	29	30	31	29	*	*	—	—	—	—

# 1919

[illegible]

## Calendar

Day of week and month	Event
<b>FIRST SEMESTER</b>	
<b>1918</b>	
Monday, June 10 .....	College of Agriculture opens.
Monday to Wednesday, June 17 to 19 .....	Entrance examination in Manila.
Wednesday to Friday, June 26 to 28 .....	Registration and physical examination days for all colleges except Agriculture.
Monday, July 1 .....	Exercises of first semester begin.
Thursday, July 4 .....	Legal holiday.
Tuesday, August 13 .....	Legal holiday.
Monday to Saturday, October 28 to November 2 (6 full days) .....	Final examinations of first semester.
Sunday, November 3 .....	First semester ends.
Monday to Sunday, November 4 to 10 .....	Intersemester vacation.
<b>SECOND SEMESTER</b>	
Monday, November 11 .....	Exercises of second semester begin.
Thursday, November 28 .....	Legal holiday.
Sunday, December 22 .....	Christmas vacation begins.
<b>1919</b>	
Wednesday, January 1 .....	Christmas vacation ends.
Thursday, January 2 .....	Exercises resumed.
Saturday, February 22 .....	Legal holiday.
Thursday to Wednesday, March 20 to 26 .....	Final examinations of second semester.
Thursday to Thursday, March 27 to April 3 .....	Commencement week.
Monday, March 31 .....	University Council meets to approve candidates for graduation.
Friday, April 4 .....	Commencement Day.





## **Board of Regents of the University of the Philippines**

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### **REGENTS EX OFFICIO**

HONORABLE CHARLES E. YEATER, A. B., A. M.  
Secretary of Public Instruction and Chairman of the Board.

HONORABLE IGNACIO VILLAMOR, A. B., A. M., LL. M.,  
President of the University.

HONORABLE RAFAEL PALMA, B. A., LICENCIADO DE JURIDICOS,  
Secretary of the Interior.

HONORABLE WALTER W. MARQUARDT, B. A., Pd. D.,  
Director of Education.

HONORABLE PEDRO GUEVARA,  
Chairman of the Committee on Public Instruction of the Philippine Senate.

HONORABLE ALEJANDRO DE GUZMAN,  
Chairman of the Committee on Public Instruction of the House of Representatives.

### **APPOINTED REGENTS**

HONORABLE MANUEL L. QUEZON.  
Term expires, 1919.

HONORABLE GALICANO APACIBLE, A. B., M. D.  
Term expires, 1918.

HONORABLE JOSE ESCALER, A. B., LL. B., LL. M., A. M.  
Term expires, 1920.

HONORABLE PABLO LORENZO, A. B., LL. B.  
Term expires, 1921.

HONORABLE HERMAN W. REYNOLDS, B. S. (M. E.) M. E.  
Term expires, 1920.

### **EXECUTIVE OFFICERS OF THE UNIVERSITY.**

Ignacio Villamor, President of the University  
Jose Gil, Secretary

ALBERT P. FITZSIMMONS,  
Treasurer of the Philippine Islands, Treasurer ex officio.

CLIFFORD H. FRENCH,  
Auditor of the Philippine Islands, Auditor ex officio.

### **STANDING COMMITTEES OF THE BOARD OF REGENTS**

#### **COLLEGE OF LIBERAL ARTS**

Regent WALTER W. MARQUARDT (Chairman), PRESIDENT IGNACIO VILLAMOR and Regent JOSE ESCALER.

#### **COLLEGE OF MEDICINE AND SURGERY**

Regents RAFAEL PALMA (Chairman), GALICANO APACIBLE and ALEJANDRO DE GUZMAN.

#### **COLLEGE OF LAW**

Regents MANUEL L. QUEZON (Chairman), JOSE ESCALER and ALEJANDRO DE GUZMAN.

**STANDING COMMITTEES OF THE BOARD OF REGENTS—Continued.**

**COLLEGE OF ENGINEERING**

**Regents** JOSE ESCALER (Chairman), CHARLES E. YEATER and PABLO LORENZO.

**COLLEGE OF VETERINARY SCIENCE**

**Regents** PEDRO GUEVARA (Chairman), WALTER W. MARQUARDT and PABLO LORENZO.

**SCHOOL OF FINE ARTS**

**Regents** CHARLES E. YEATER (Chairman), JOSE ESCALER and WALTER W. MARQUARDT.

**PERSONNEL**

**President** IGNACIO VILLAMOR (Chairman), and **Regents** MANUEL L. QUEZON and RAFAEL PALMA.

**LEGISLATION**

**Regents** RAFAEL PALMA (Chairman) and PEDRO GUEVARA and **President** IGNACIO VILLAMOR.

**GROUNDS AND BUILDINGS**

**Regents** CHARLES E. YEATER (Chairman), PEDRO GUEVARA and **President** IGNACIO VILLAMOR.

**FINANCE**

**Regent** MANUEL L. QUEZON (Chairman), **President** IGNACIO VILLAMOR and **Regent** GALICANO APACIBLE.

**COLLEGE OF AGRICULTURE**

**Regents** GALICANO APACIBLE (Chairman), MANUEL L. QUEZON and RAFAEL PALMA.

**CONSERVATORY OF MUSIC**

**Regents** PEDRO GUEVARA (Chairman), WALTER W. MARQUARDT and GALICANO APACIBLE.

## **Officers of Administration**

---

IGNACIO VILLAMOR,  
President of the University.

CHARLES FULLER BAKER,  
Acting Dean of the College of Agriculture.

FERNANDO CALDERON,  
Dean of the College of Medicine and Surgery.

CLARENCE G. WRENTMORE,  
Dean of the College of Engineering.

JORGE BOCOBO,  
Dean of the College of Law.

WILLIAM H. BOYNTON,  
Dean of the College of Veterinary Science.

CONRADO BENITEZ,  
Dean of the College of Liberal Arts.

FRANCISCO BENITEZ,  
Dean of the College of Education.

ARTHUR FREDERICK FISCHER,  
Dean of the Forest School.

WALLACE W. GEORGE,  
Director of the Conservatory of Music.

RAFAEL ENRIQUEZ,  
Dean of the School of Fine Arts.

JOSE GIL,  
Secretary of the University.

FERMIN MENDOZA,  
Chief Accountant and Assistant Disbursing Officer.

FELIPE FRANCISCO,  
Chief of Records.

## **UNIVERSITY COUNCIL**

The University Council consists of the President, Secretary, the Deans, and all officers of instruction holding the rank of professor, associate professor, and assistant professor.

## **COMMITTEE ON ADMISSION**

Dean FERNANDO CALDERON.

Dean WILLIAM H. BOYNTON.

Dean JORGE BOCOBO.

Dean CLARENCE G. WRENTMORE.

Acting Dean CHARLES F. BAKER.

Dean CONRADO BENITEZ.

Dean FRANCISCO BENITEZ.

Dean ARTHUR F. FISCHER.

Dean RAFAEL ENRIQUEZ.

Director WALLACE W. GEORGE.

ATHLETIC ASSOCIATION  
BOARD OF CONTROL

FACULTY MEMBERS

Associate Professor GEORGE W. ST. CLAIR, President.  
Professor JORGE BOCOBO.  
Associate Professor FELIX HOCSON.  
Associate Professor VICTOR BUENCAMINO.  
Assistant Professor JAMES R. GILLIS.  
Associate Professor H. LAWRENCE NOBLE, Secretary-Treasurer.  
Assistant Professor GEORGE MICHAEL CASSIDY, Physical Director.

COMMITTEE ON STUDENT WELFARE

Professor CONRADO BENITEZ.  
Professor FRANCISCO BENITEZ.  
Associate Professor H. LAWRENCE NOBLE.  
Associate Professor VICTOR BUENCAMINO.  
Associate Professor RANDALL ADAMS ROWLEY.  
Associate Professor FELIX HOCSON.  
Associate Professor GEORGE MICHAEL CASSIDY.  
Director of Women, Dr. MARIA PAZ MENDOZA-GUAZON.  
Director of Women, Miss RAMONA SALUD TIRONA.

## LAW FOUNDING THE UNIVERSITY OF THE PHILIPPINES

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An Act for the purpose of founding a university for the Philippine Islands, giving it corporate existence, providing for a Board of Regents, defining the board's responsibilities and duties, providing higher and professional instruction, and for other purposes. [Act No. 1870, amended by Act No. 2024, enacted Jan. 30, 1911, Act No. 2483, enacted Feb. 5, 1915, and Act No. 2759, enacted February 23, 1918.]

*By authority of the United States, be it enacted by the Philippine Legislature, that:*

SECTION 1. The Governor-General is hereby authorized, within the powers and limitations hereinafter specified, to establish in the city of Manila, or at the point he may deem most convenient, a university which shall be known by the designation of "University of the Philippines" the same being organized as a corporation under that name.

SEC. 2. The purpose of said University shall be to provide advanced instruction in literature, philosophy, the sciences, and arts, and to give professional and technical training.

SEC. 3. No student shall be denied admission to the University by reason of age, sex, nationality, religious belief, or political affiliation.

SEC. 4. The government of said University is hereby vested in a Board of Regents to be known as the "Board of Regents of the University of the Philippines." The Board of Regents shall be comprised of the Secretary of Public Instruction, who shall be ex officio chairman of the board; the Secretary of the Interior; the chairman of the Committee on Public Instruction of the Senate; the chairman of the Committee on Public Instruction of the House of Representatives; the Director of Education; the President of the University; one member of the University Council of the University of the Philippines, elected by said council; an alumnus of the University of the Philippines, elected by the alumni of the University under such rules and regulations as may be promulgated by the Board of Regents; and three additional members to be appointed by the Governor-General, by and with the consent of the Senate. The president of the University shall be elected and his compensation shall be fixed by the Board of Regents. The member elected by the University

Council and the one elected by the alumni of the University shall hold office for a term of three years or until their successors are elected or appointed. Beginning with October sixteen, nineteen hundred and nineteen, the members of the Board of Regents appointed by the Governor-General shall hold office for a term of three years: *Provided, however,* That the regents first appointed after said date shall hold office as follows: One for one year, one for two years, and one for three years, the term of office of each to be specified in his appointment by the Governor-General. In case of a vacancy among the members of the Board of Regents appointed by the Governor-General, such vacancy shall be filled by appointment by the Governor-General, by and with the advice and consent of the Philippine Senate, and such appointee shall hold office for the unexpired term. All members of the Board of Regents shall be citizens of the Philippine Islands or of the United States, and shall be residents of the Philippine Islands. Members shall serve without compensation other than actual and necessary traveling expenses incurred either in attendance upon meetings of the Board or upon other official business authorized by resolution of the Board.

SEC. 5. The University of the Philippines shall have the general powers set out in section thirteen of Act Numbered Fourteen hundred and fifty-nine, and the administration of said University and the exercise of its corporate powers are hereby vested exclusively in the Board of Regents and the president of the University in so far as authorized by said Board.

SEC. 6. The Board of Regents shall have the following powers and duties, in addition to its general powers of administration and the exercise of the powers of the corporation:

(a) To receive and appropriate to the ends specified by law such sums as may be provided by law for the support of the University;

(b) To provide for the establishment of one or more Colleges of Liberal Arts; a College of Law; a College of Social and Political Science; a College of Medicine and Surgery; a College of Pharmacy; a College of Dentistry; a College of Veterinary Science; a College of Engineering; a College of Mines; a College of Agriculture; a College of Education; a School of Fine Arts; a School of Forestry; a Conservatory of Music, and such other colleges and schools as the Board of Regents may deem necessary: *Provided,* That the Board of Regents may establish these colleges, or any of them, in Manila or in any other place in the Archipelago, as soon as in its judgment conditions shall favor their

opening and funds shall be available for their maintenance: *And provided further*, That the Board of Regents shall have power to combine two or more of the colleges authorized by this Act, in the interests of economy and efficiency: *And provided finally*, That the Philippine Medical School, as established by Act Numbered Fourteen hundred and fifteen, as amended, shall become the College of Medicine and Surgery of the Philippine University as soon as two or more colleges of the University of the Philippines shall have been established and in actual operation;

(c) To confer the usual honorary degrees upon persons other than graduates of the University in recognition of learning, statesmanship, or eminence in literature, science, or art: *Provided*, That such degrees shall not be conferred in consideration of the payment of money or other valuable consideration;

(d) To establish chairs in the colleges hereinbefore mentioned, and to provide for the maintenance or endowment of such chairs, as well as to provide for such other professors, assistant professors, instructors, tutors, and lecturers as the progress of instruction may make necessary, and to fix the compensation pertaining to such positions;

(e) To appoint, on the recommendation of the president of the University, professors, instructors, lecturers, and other employees of the University, to fix their compensation, hours of service, and such other duties and conditions as it may deem proper, to apply to them in its discretion the Leave Law, any other provision of law to the contrary notwithstanding, and to remove them for cause after an investigation and hearing shall have been had;

(f) To approve the courses of study and rules of discipline drawn up by the university council as hereinafter provided; to fix the tuition fees required of students, as well as matriculation fees, graduation fees and fees for laboratory courses, and all special fees; and to remit the same in special cases;

(g) To provide fellowships and scholarships and to award the same to students giving special evidence of merit;

(h) To prescribe rules for its own government, and to enact for the government of the University such general ordinances and regulations, not contrary to law, as are consistent with the purposes of the University as defined in section two of this Act.

(i) To receive, in trust, bequests, gifts, and donations of real and personal property, of whatever kind, and to administer the same for the benefit of the University, or any department thereof,

or for the assistance of any student or students thereof, in accordance with the request or direction of the donor, and, in the absence thereof, as may be determined by the Board of Regents in its discretion.

SEC. 7. A quorum of the Board of Regents shall consist of a majority of all the members holding office at the time the meeting of the Board is called. All process against the Board of Regents shall be served on the president or secretary thereof.

SEC. 8. On or before the tenth day of August of each year the Board of Regents shall file with the Governor-General a detailed report, setting forth the progress, condition, and needs of the University.

SEC. 9. There shall be a university council, consisting of the president of the University and of all instructors in the University holding the rank of professor, associate professor, or assistant professor. The council shall have power to prescribe the courses of study and rules of discipline, subject to the approval of the Board of Regents. It shall fix the requirements for admission to any college of the University, as well as for graduation and the receiving of a degree. The council alone shall have the power to recommend students or others to be recipients of degrees. Through its president or committees it shall have disciplinary power over the students within the limits prescribed by the rules of discipline approved by the Board of Regents. The powers and duties of the president of the University, in addition to those specifically provided for in this Act, shall be those usually pertaining to the office of the president of a university.

SEC. 10. The body of instructors of each college shall constitute its faculty, and as presiding officer of each faculty there shall be a dean elected from the members of such faculty by the Board of Regents on nomination by the President of the University. In the appointment of professors or other instructors of the University, no religious test shall be applied, nor shall the religious opinions or affiliations of the instructors of the University be made a matter of examination or inquiry: *Provided, however,* That no instructor in the University shall inculcate sectarian tenets in any of the teachings, nor attempt, either directly or indirectly, under penalty of dismissal by the Board of Regents, to influence students or attendants at the University for or against any particular church or religious sect.

SEC. 11. Professors and other regular instructors in the University shall be exempt as such from any civil-service examination or regulation as a requisite to appointment.



SEC. 12. There shall be a secretary of the University, appointed by the Board of Regents. He shall be the secretary of such Board and also of the University, and shall keep such records of the University as may be designated by the Board.

SEC. 13. The treasurer of the Philippine Islands shall be *ex officio* treasurer of the University, and all accounts and expenses thereof shall be audited by the Insular Auditor, and all disbursements shall be made in accordance with rules and regulations prescribed by him.

SEC. 14. Heads of Bureaus and Offices of the Insular Government are hereby authorized to loan or transfer, upon request of the president of the University, such apparatus or supplies as may be needed by the University and to detail employees for duty therein, when in the judgment of the head of the Bureau or Office such supplies or employees can be spared without serious detriment to the public service. Employees so detailed shall perform such duty as is required under such detail, and the time so employed shall count as part of their regular official service.

SEC. 15. The Governor-General, the President of the Senate, and the Speaker of the House of Representatives shall constitute a board of visitors of the University, whose duty it shall be to attend the commencement exercises of the University, and to make visits at such other times as they may deem proper, to examine the property, course of study, discipline, the state of finances of the University, to inspect all books and accounts of the institution, and to make report to the Philippine Legislature upon the same, with such recommendations as they favor.

SEC. 16. The sum of one hundred thousand pesos is hereby appropriated, out of any funds in the Insular Treasury not otherwise appropriated, to be expended in the discretion of the Board of Regents for the establishment of a college or colleges authorized by this Act the establishment of which may be considered most urgent.

SEC. 17. This Act shall take effect on its passage.

Enacted, June 18, 1908.

## HISTORICAL SKETCH

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Pursuant to the passage of the foregoing act by the First Philippine Legislature, the work of establishing the colleges thus provided for was begun during the latter part of the year 1908.

The Philippine Medical School, established by a special act on December 1, 1905, and opened to students for the purpose of instruction on June 10, 1907, became the College of Medicine and Surgery of the University on December 8, 1910.

The School of Fine Arts was temporarily established in a house rented for that purpose on 931 Calle R. Hidalgo, Quiapo, in the city of Manila, and was opened to students in June, 1909.

A location for the College of Agriculture was obtained by the transfer to the Board of Regents of certain lands near Los Baños, in the Province of Laguna, which had already been secured by the Bureau of Education for an Agricultural School. A temporary building was erected on this property, and school work began therein June, 1909.

The establishment of the Experimental Station annexed to the College of Agriculture was authorized by the Legislature under Act No. 2730, enacted February 15, 1918.

Buildings for a College of Veterinary Science were erected on land adjoining the animal quarantine station at Pandacan, Manila. The first class was received in June, 1910. In November, 1912, the Veterinary Clinic and Hospital were opened on the grounds adjoining San Lazaro Hospital.

The College of Liberal Arts and the College of Engineering were established June 3, 1910, and their classes opened the same month. The College of Liberal Arts had previously existed as a Government school in the Bureau of Education, known by the name of the Junior College of Liberal Arts.

A course in pharmacy was instituted under the administrative control of the College of Liberal Arts, June 5, 1911. Beginning with the academic year 1914-15 this course, by action of the Board of Regents on February 12, 1914, was transferred to the College of Medicine and Surgery under the direction of the School of Pharmacy.

The Board of Regents at its meeting of May 3, 1918, authorized the establishment of a Junior College of Liberal Arts in the

city of Cebu and its classes were opened formally to students on July 1, 1918.

The construction of the Rizal Hall was authorized by the Legislature under Act No. 2736, enacted February 15, 1918.

The School of Education, a department of the College of Liberal Arts authorized by the Board of Regents at its meeting of December 8, 1913, became, by a resolution of said board, the College of Education on July 1, 1918.

The College of Law was established January 12, 1911.

On February 4, 1916, the Philippine Legislature by Act No. 2578 founded the Forest School at Los Baños.

Previous to this time the Ranger's Course in Forestry was given in the College of Agriculture.

On February 8, 1915, the Board of Regents authorized the institution of a course in dentistry to be given in the College of Medicine and Surgery.

The Conservatory of Music was authorized by Act No. 2623, and the classes were opened on September 4, 1916. The conservatory is located at No. 963 Calle R. Hidalgo in a building rented for that purpose.

The College of Agriculture and the Forest School are situated at Los Baños. All other colleges of the University are in Manila.

The government of the University of the Philippines is intrusted to a Board of Regents, consisting of the Secretary of Public Instruction, the Secretary of the Interior, the chairman of the Committee on Public Instruction of the Senate, the chairman of the Committee on Public Instruction of the House of Representatives, the Director of Education, the President of the University, one member of the University Council of the University of the Philippines, an alumnus of the University of the Philippines, and three additional members who were appointed by the Governor-General, by and with the consent of the Senate. To the Board of Regents is committed the general administration of the University; this includes the management of its finances, the establishment of such colleges and schools as are authorized by law, the conferring of degrees, the establishment of departments of instruction and appointment of teachers, the approval of courses of study and rules of discipline, and the determination of the internal organization of the University in all particulars which are not fixed by law.

The instruction and government of the students of the University are intrusted to the faculties of the several colleges and to the university council.

The faculty of each college consists of the president of the University and those professors and instructors whose departments are represented in it by required or elective studies.

The constitution and powers of the special faculties are defined by section 10 of the University Act.

The body of instructors of each college shall constitute its faculty, and as presiding officer of each faculty there shall be a dean elected from the members of such faculty by the Board of Regents on nomination by the President of the University. In the appointment of professors or other instructors of the University, no religious test shall be applied, nor shall the religious opinions or affiliations of the instructors of the university be made a matter of examination or inquiry.

The constitution and powers of the university council are defined as follows by section 9 of the University Act.

There shall be a university council, consisting of the president of the University and of all instructors in the University holding the rank of professor, associate professor, or assistant professor. The council shall have power to prescribe the courses of study and rules of discipline, subject to the approval of the Board of Regents. It shall fix the requirements for admission to any college of the University, as well as for graduation and the receiving of a degree. The council alone shall have the power to recommend students or others to be recipients of degrees. Through its president or committees it shall have disciplinary power over the students within the limits prescribed by the rules of discipline approved by the Board of Regents.

The Board of Visitors is a body consisting of the Governor-General, the President of the Senate, and the Speaker of the House of Representatives, whose duties are to attend the commencement exercises of the University, and to make visits at such other times as they may deem proper, to examine the property, course of study, discipline, the state of finances of the University, to inspect all books and accounts of the institution, and to make report to the Philippine Legislature upon the same, with such recommendations as they favor.

#### RULES GOVERNING THE ELECTION OF A MEMBER OF THE BOARD OF REGENTS BY THE UNIVERSITY COUNCIL

1. *Election at meeting of Council; call for meeting.*—Election of a member of the Board of Regents by the University Council shall take place on the day the council meets to approve candidates for graduation, beginning this year (1918) and upon the same day every three years thereafter.

2. *Voters.*—Only members of the University Council are entitled to vote at this election.

3. *Eligibility*.—Only members of the University Council shall be eligible for the office of regent chosen at this election.

4. *Secret ballot*.—Election shall be by secret ballot.

5. *What constitutes choice*.—A majority of the votes cast shall constitute a choice, provided there is a quorum present.

6. *Vote by proxy*.—No vote by proxy shall be received.

7. *Certificate of election*.—The secretary of the University Council shall forthwith certify to the result of the election and forward the certificate to the Board of Regents.

8. *When regent-elect qualifies*.—The regent-elect shall qualify at the meeting of the Board immediately following his election.

#### RULES GOVERNING THE ELECTION OF A MEMBER OF THE BOARD OF REGENTS BY THE ALUMNI OF THE UNIVERSITY OF THE PHILIPPINES

SEC. 1. *Qualifications of voters*.—Every person, regardless of sex and age, holding any of the degrees granted by the University of the Philippines, or the certificates for high school teachers.

SEC. 2. *Manner of election*.—The president of the University shall fix a period within which nominations may be received at the office of the secretary of the University.

Every nomination shall be signed by at least twenty-five alumni who are qualified to vote. No alumnus shall sign more than one nomination.

Election shall be by ballot, signed by the alumnus voting and sent to the office of the secretary. The president shall appoint a faculty committee on elections, of which the secretary of the University shall be a member, and whose duty it shall be to prepare the official ballot, to see to it that the election is legally carried out, to count the votes cast, and to report the result of the election to the president of the University. Upon receipt of the committee's report, the president shall present the same to the Board of Regents.

SEC. 3. *What constitutes a choice*.—The candidate receiving the highest number of votes shall be declared elected.

In case of tie, the tied candidates or their representatives shall draw lots in the presence of the faculty committee on elections, and the successful candidate shall be declared elected.

SEC. 4. *Election contests*.—In case of election contest, the same shall be decided by the president of the University, after both parties have been given an opportunity to be heard.

## GENERAL INFORMATION

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### ADMISSION REQUIREMENTS.

Applications for admission are received from four classes of candidates: (*a*) Persons who desire to begin, in some college of the University, a regular course of study leading to a degree conferred in that college; (*b*) students who, having already attended some institution of collegiate rank, desire advanced standing in a regular course in some college of the University; (*c*) special students, not candidates for any degree; (*d*) graduate students. The conditions of admission for these classes of persons are separately described on pages 28 and 29.

Every applicant for admission to the University of the Philippines, in case he has previously attended some other college or university without graduating must file with the secretary of the University a certificate of his honorable dismissal from that institution.

As evidence that they have satisfactorily pursued the subjects required for admission, candidates may take the entrance examinations given by the University, or may present certificates accepted by the University as equivalent for all or any part of their subjects.

For privileges extended to candidates presenting on admission more than the required amount of entrance subjects, see page 29 "Admission to Advanced Standing."

### ENTRANCE EXAMINATIONS

Examinations in all subjects required for admission to the University will be held at the University Hall, Ermita, Manila, about the middle of June of every year.

Permission to take these examinations must be secured from the dean of the college concerned at least two weeks before the date of the examination. Permits will be sent by mail upon application.

No examination of candidates for admission will be held by the University at any other time or place.

A schedule of the university entrance examinations may be obtained from the dean of the college concerned.

Students deficient in any of the subjects required for admission who may, in spite of such deficiencies, be admitted to any college by the faculty concerned, *must make up all deficiencies within one year.*

(For subject matter of the entrance examinations given by the Committee on Admissions, See under College of Liberal Arts, page 50.

#### LABORATORY NOTEBOOKS

The notebooks required of all candidates for admission must contain the student's own record of his laboratory experiments, written up in the laboratory, and be presented at the time of the examination. Upon the cover of every notebook there must be attached a statement, signed by the teacher, similar in form to the following:

I hereby certify that the accompanying notebook is the original record of the experiments performed by ..... in the ..... laboratory of the ..... School, during the school period from ..... to .....

All notebooks will be returned to the candidate upon application at any time within one year after the examination.

#### ENTRANCE REQUIREMENTS

##### REQUIRED ENTRANCE SUBJECTS

(For Colleges of Liberal Arts, Education, Veterinary Science, Engineering, and School of Pharmacy.)

I. Fifteen units are required for entrance to the collegiate departments of the University. Nine of these units are prescribed for admission to the first year class in all undergraduate courses and no substitutes are accepted.

##### LIST A

	Unit.
History and economics.....	1
English .....	5
Mathematics .....	2
Science with laboratory work.....	1
Total .....	9

II. Of the 6 units remaining, certain ones are prescribed for admission to the different courses as follows:

	Unit.
1. For the general course, Latin or Spanish <sup>1</sup> .....	1
2. For the preparatory course for Law, Latin or Spanish <sup>1</sup> .....	1
3. For the preparatory course for medicine, science.....	1
4. For the course in general science, science.....	1
5. For the courses in chemistry and biology, science.....	1
6. For the course in commerce, One modern language....	2
7. For the course in engineering, mathematics.....	1
8. For the course in library science, literature.....	1

III. In addition, enough units must be selected from List B to make up the total required number of 15 units. One unit may be selected from List C in substitution for one unit of List B.

#### LIST B

Latin, Greek, French, German, Spanish, Italian, Japanese, Chinese, English, advanced algebra, plane geometry, solid geometry, trigonometry, history, civics, economics, commercial and physical geography, botany and zoölogy, physics and chemistry.

#### LIST C

Agriculture, bookkeeping, business law, domestic science, drawing, manual training, music.

#### SUMMARY OF THE REQUIREMENTS BY COURSES

1. For the general B. A. course:	Unit.
List A .....	9
Special prescription, Spanish or Latin.....	2
From List B.....	3
From List C.....	1
Total .....	15
2. For the general B. S. course:	
From List A.....	9
Special prescription, laboratory science.....	1
From List B.....	4
From List C.....	1
Total .....	15
3. For the course in chemistry and biology:	
From List A.....	9
Special prescription, science.....	1
From List B.....	4
From List C.....	1
Total .....	15

<sup>1</sup> For the academic year 1918-19 and 2 units thereafter.



## SUMMARY OF THE REQUIREMENTS BY COURSES—continued

	Unit.
4. For the course in commerce:	
From List A.....	9
Special prescription, 1 modern language.....	2
From List B.....	3
From List C.....	1
Total .....	<u>15</u>
5. For the preparatory course in engineering:	
From List A.....	9
Special prescription, mathematics.....	1
From List B.....	4
From List C.....	1
Total .....	<u>15</u>
6. For the library science:	
From List A.....	9
Special prescription, literature.....	1
From List B.....	4
From List C.....	1
Total .....	<u>15</u>
7. For the course in preparatory law:	
From List A.....	9
Special prescription, Spanish.....	2
From List B.....	3
From List C.....	1
Total .....	<u>15</u>
8. For the course in preparatory medicine:	
From List A.....	9
Special prescription, science.....	1
From List B.....	4
From List C.....	1
Total .....	<u>15</u>

## SUMMARY OF THE REQUIREMENTS FOR THE COLLEGE OF EDUCATION

	Unit.
List A .....	9
List B .....	5
List C .....	1
Total .....	<u>15</u>

## GENERAL PROVISIONS

All diplomas, certificates, and statements offered in lieu of university entrance examinations should be sent by mail to the secretary of the University, as early as possible in the summer before the opening of the school year.

Application for credit in all subjects for which credit is desired must be made at the time of the admission of the applicant; it should not be postponed to any later date in his course, and no certificate will be considered after the end of the first semester of attendance.

*Certificates are accepted for the subjects of physics, botany, zoölogy, and general biology only on condition that the applicant send to the secretary his notebook, with the teacher's statement attached, as described in the foregoing account of the university entrance examinations in these subjects, and the notebook be approved by the head of the proper department in the University.*

The notebook will be returned to the candidate upon application at any time within one year.

#### METHODS OF ADMISSION

The credits required for admission may be secured:

- (a) By examination.
- (b) By certificate from a secondary school in the accredited list of the University.
- (c) By transfer from another college or university of recognized standing.

A. The examination shall cover all the subjects required or accepted for admission as outlined above.

B. *Admission from an accredited school.*—The University Committee on Admission or its representative shall visit and inspect, with the permission of the Secretary of Public Instruction, high schools and preparatory schools, both public and private, as often as the committee deems necessary and, on the basis of the findings of this committee or its representatives, the University will give credit to all work which is found to be sufficiently well done. Students presenting a certificate from any of these schools in the accredited list of the University shall be given entrance credits in all those subjects for which the school is specially accredited as shown in the certificate issued to the school by the University.

Written application for admission to the University accompanied by an official certificate from the accredited school showing the character and extent of the applicant's preparatory work as well as certificate of honorable dismissal from the school last attended should be presented to the dean of the college concerned at least one week before the beginning of the semester.

C. *Admission by transfer from other colleges or universities.*—A person who has been admitted to another college or university

of recognized standing will be admitted to this University upon presenting a certificate of honorable dismissal from the institutions from which he comes. Admission to advanced standing by transfer of college credit will be decided upon by the dean of the college and the chief of the department concerned.

#### FOREIGN STUDENTS

Candidates for admission who come from foreign countries should bring complete official credentials. Upon arriving at the University foreign students should obtain all necessary information from the dean of the college they desire to enter.

#### ADMISSION OF SPECIAL STUDENTS

Persons over 20 years of age may be admitted as special students provided they secure the recommendation of the professor whose work they wish to take and the approval of the dean of the college concerned. They must also give evidence that they possess the ability and experience to pursue profitably their chosen subjects.

No one may enroll as special student in the University for more than two years except by special permission of the dean of the college concerned.

#### ADMISSION TO ADVANCED STANDING

When a student matriculates in any college, he shall be given advanced credit for any specific course offered in the curriculum of that college upon presentation of satisfactory evidence to the Chief of the Department under which the course is given showing that he has previously completed the full equivalent of the course.

When a student shall present evidence that he has pursued any subject for a sufficient time and that he has accomplished a definite progress in that subject equivalent to a certain number of units of University credit but the work pursued is not the equivalent of any particular course offered in the University, the head of the department under which this subject is given may award to the student advanced credit in the form of general credit in the subject pursued.

Applications for advanced credit shall be made not later than July fifteenth following matriculation, and shall be returned to the Dean not later than September first of the same year; provided that the Faculty may, upon petition of the student, extend this time.

## COURSES FOR GRADUATES

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Under the authority of the Board of Regents, graduate students may register in the University and pursue their studies under the direction of a committee of the university council.

### THE DEGREES OF MASTER OF ARTS AND MASTER OF SCIENCE

Students who have been granted the degree of Bachelor of Science or who have completed two years of properly chosen work in addition to the requirements in force for the degree of Bachelor of Arts in the University of the Philippines, or who can demonstrate that their training is the equivalent of two years of properly chosen work beyond these requirements will be admitted to candidacy for the master's degree, subject to the approval of the committee on graduate study.

Each student before he presents himself as a candidate for a master's degree must have a reading knowledge of French or German and in the case of senior college students of the College of Liberal Arts, must have completed 20 units in a major subject of study.

After having been admitted to candidacy for the master's degree by a vote of the committee on graduate study, the student shall pursue a course of study approved by this committee. This work shall be carried on under an adviser appointed by the committee on graduate study.

The following are the general requirements for the granting of the master's degree:

(a) The student shall be in residence in the University for at least one year after admission to candidacy.

(b) He shall present a thesis which shall be on some subject approved by the chief of the department in which the subject is chosen and by the adviser appointed by the committee on graduate study.

(c) The thesis shall represent one-third of a full year's college work and shall be passed upon by a committee appointed by the committee on graduate study.

(d) A bound copy of the thesis, prepared according to the instructions issued by the secretary of the University, shall be

presented by the candidate to the University and shall be preserved in the official records of the University, provided, that in lieu of presenting a typewritten thesis to become a part of the official records of the University, any candidate may elect to deposit a similarly bound printed thesis; and as a guarantee of such presentation, if the thesis is not yet printed, he must deposit with the Secretary of the University the sum of ₱50 which will be forfeited if the printed thesis is not presented within one year.

(e) The student shall complete at least 90 units of advanced subjects, or of work which may be considered as equivalent, beyond the requirements for the degree of Bachelor of Arts in the University of the Philippines.

Persons satisfactorily complying with these conditions will be granted degrees as follows:

(a) The degree of Master of Science in case the thesis deals with a scientific or technical subject.

(b) The degree of Master of Arts in case the thesis deals with a subject which is one of those usually recognized as "the humanities."

[NOTE.—For the degree of Master of Science in Engineering or Chemistry particular requirements have been adopted by the University Council. (See pages 305 and 70).]

#### THE DEGREES OF DOCTOR OF TROPICAL MEDICINE AND DOCTOR OF PUBLIC HEALTH

For the conditions required for admission to candidacy for these degrees, see page 210.

For post-graduate law review course see page 230.

#### FURTHER OPPORTUNITIES FOR GRADUATE STUDY

For those who have received the Master's degree, there are exceptional opportunities in several departments to do graduate or research work.

*Botany.*—The herbarium of the Bureau of Science, which is rapidly being increased, now contains over 125,000 mounted specimens, of which approximately two-thirds are Philippine and the remainder extra-Philippine. The material is arranged by families, genera, and species, so that everything on hand is readily accessible for study. This collection, with the accompanying library facilities of the Bureau of Science, forms one of the best centers for taxonomic research outside of Europe and North America.

The extra-Philippine material is for the most part from the Tropics, and in developing this part of the herbarium especial attention has been given to securing representative botanical material from the Indo-Malayan region in general; the herbarium contains exceedingly valuable collections of plants from India, southern China, Formosa, Cochin China, the Malay Peninsula and Archipelago, Australia, and Polynesia.

The Philippine collection is the largest and most valuable extant, containing representatives of nearly all the species definitely known to grow in the Archipelago. It is especially rich in types and cotypes. The great bulk of the herbarium is made up of the phanerogamic collection, but the cryptogamic section includes exceedingly extensive collections, for the most part identified, of ferns and fern allies, as well as large collections of named mosses, scalemosses, fungi, lichens, and algæ.

The Bureau of Science is thoroughly equipped for those electing to carry on work in plant physiology and in systematic or economic mycology. The botanical library is very extensive and contains a practically complete set of books applying to the flora of the Philippines and to the Indo-Malayan region as a whole. The list of general botanical publications is extensive, and the library is rich in sets of periodicals, proceedings of societies, etc.

The College of Agriculture at Los Baños is situated in a remarkably favorable spot for botanical work. The college buildings are at the very foot of Mount Maquiling, and not distant from the shore of Laguna de Bay.

Maquiling rises to a height of about 1,500 meters above the lake, and the trip to the summit and return can readily be made in a day. Within easy reach is the much higher mountain, Banajao. "From the lake to the mossy forest on the summit of Maquiling, every great tropical formation, except the mangrove and the alpine scrub, is present within convenient reach. Aside from the large number of introduced plants on the campus, there is an extraordinary large local flora; and this vegetation never rests."

*Chemistry.*—The privileges of the excellent research equipment of the Bureau of Science and the facilities for advanced work offered by its staff and by the library are open to advanced students of chemistry who desire to complete their courses for advanced degrees or to prepare a thesis on chemical subjects. The privilege of such study will be granted upon application to the president of the University for admission to the course and

upon application to the Director of the Bureau of Science for admission to the laboratories of the latter institution. The work of the Bureau of Science appears in the Philippine Journal of Science, which is published by the Bureau of Science of the Philippine Government, and investigators will be given every opportunity for carrying on their work and for publication. So many topics exist which especially relate to conditions in the Tropics that this opportunity offers an enticing field to chemists desiring to broaden their training.

*Zoölogy.*—The zoölogical laboratory is situated within a few hundred yards of the shore of Manila Bay. Many places of interest to zoölogists are easily accessible by short steamer journeys. A marine biological survey has been instituted by the University and the Bureau of Science. Investigators who desire to accompany the field expeditions will be welcomed. The Bureau of Science has large and fairly complete collections of Philippine birds, reptiles, fishes, and insects. The scientific library of the Bureau of Science contains nearly all of the principal sets of zoölogical literature.

*History.*—The Philippine Library, which includes the Tavera, Retana, Compañía Tabacalera, and Zulueta collections, possesses by far the best collection of Filipiniana in existence; and as the early history of the Philippines was closely connected with the beginning of European interest in the Far East, it is probable that in this field also the library leads. The convents of the religious orders contain records of the first missionary efforts in Asia and the Government archives have many papers bearing on early political affairs. It is believed that nowhere else will the student find such opportunities in primary sources for studying the beginnings and progress of European and American influence in the Far East, a subject of increasing interest since the modernizing of the Orient.

*Anthropology.*—The complex racial and linguistic problems afforded by the Philippines and the neighboring oriental countries offer an unusually rich field for original research in anthropology. In addition to the unique library facilities mentioned under "History," students in this department have the advantage of free access to the collections of the Philippine Museum, the Ateneo de Manila, and the University of Santo Tomás. The ethnological literature in the library of the Bureau of Science, and in certain private collections especially rich in unpublished manuscripts, may also be used by graduate students.

## REGISTRATION EACH SEMESTER

At the beginning of each semester every student must obtain a certificate of registration from the secretary and no student, after being once admitted to the University, will be allowed to register after the close of the registration period, except by special permission of the faculty concerned.

## REGISTRATION OF STUDENTS

Students in all undergraduate courses must register for the work in each college at the time prescribed by their college. No credit will be allowed for work not so registered. To promote prompt registration, a fee of ₱5 is charged those who seek to register later than the specified date of registration unless previously excused by the president of the University. Changes in registration will not be allowed except by special permission of the faculty concerned, in which case any registration will be subject to a fee of ₱5.

No person will be admitted as a student to the exercises of any professor or instructor except as authorized by the official certificate of registration furnished to each student by the dean or secretary subject to the approval of the proper adviser.

Every student is required to attend all his class exercises and to satisfy the instructor in each of his courses of study, in such way as the instructor may determine, that he is performing the work of the course in a satisfactory manner.

Any instructor, with the approval of the dean, may at any time exclude from his course any student who, in his judgment, has neglected the work of the course. Any student thus excluded shall be recorded as having failed in the course of study from which he is excluded, unless the faculty shall otherwise determine.

## CREDITS

One university hour of credit is one lecture or recitation each week for the period of a complete semester.

In all courses, two and a half to three hours of laboratory work, and, in the technical courses, three hours of drafting or shopwork, are regarded as the equivalent of one recitation or lecture.

## ATHLETIC ASSOCIATION OF THE UNIVERSITY OF THE PHILIPPINES

Every student of the Colleges of Liberal Arts, Education, Agriculture, Medicine and Surgery, Engineering, Veterinary Science,



and Law and of the Conservatory of Music will pay an athletic fee of ₦1 per semester, which will be turned into the treasury of the athletic association.

Each student of these colleges becomes, upon payment of this fee, a member of the athletic association. Payment of the fee entitles the student to admission to all university athletic contests. The government of this association is vested in a board of control, which shall consist of a president, a secretary-treasurer, and seven members, elected by the university council, who shall be members of the faculties of the University, and seven student representatives from the colleges of the University, elected by the student bodies of the colleges concerned. The physical director of the University is a member *ex officio* of the board of control. The board of control shall supervise the management and finances of every athletic organization representing the University.

#### GRADES OF SCHOLARSHIP

The results of examinations, together with term work when a record of the latter is kept, will be ranked and reported in five grades, 1, 2, 3, 4, 5. The first grade denotes marked excellence. The second grade indicates that the student's work has been thoroughly satisfactory. The third grade denotes a pass. Courses in which students have obtained a fourth grade will not be credited to them, except upon the condition of passing a second examination. The fifth grade indicates failure and the necessity of repeating the entire course. The report in case of absence from an examination, or of failure to perform any of the allotted work in a given course, is *incomplete*. Work so reported must be made up within a year.

When, for reason of poor scholarship, a student is dropped from any course after midsemester, the condition is attached to such dropping of the course and he shall receive a grade 5 in the final report.

The entrance examinations are ranked and reported in five grades, corresponding with the five grades used for university courses. In the case of entrance examinations, neither a fourth grade (condition) nor a fifth (failure) may be removed until the next scheduled entrance examination.

Second examinations are permitted only for the purpose of removing deficiencies. Students who have received second grade or third grade in a given course are not allowed such examinations for the purpose of improving their grade.

## CONDITIONS AND FAILURES

For the removal of conditions, students shall have the privilege of taking the regular mid-year or annual examinations in the subjects in which they are conditioned, or the special examinations for the removal of conditions only, held regularly at the beginning of each semester. Examinations may be held at other times only by the special permission of the faculty and on payment of a fee of ₱10. *All conditions must be made up within one year.*

Opportunity for the removal of matriculation deficiencies is offered each year at the time of the entrance examinations.

Any undergraduate student who is reported as having failed in a course, or after being conditioned, does not pass a second examination for the removal of the condition, will be required to repeat every such deficient subject with the class that next takes it; unless, on recommendation of the instructor in charge, the faculty shall permit him to review a subject in which he is thus deficient with the assistance of an acceptable private tutor; in which case he will be excused from attending the recitations, but will be required to take the regular examinations at the end of the year or half year.

No student will be recommended for a degree until all deficiencies incurred at any time during the course have been finally and satisfactorily removed, and the secretary's report shows a completely clear record and that all indebtedness has been discharged. All examinations of candidates must have been passed prior to the meeting of the university council appointed for recommending candidates for degrees.

## LEAVE OF ABSENCE AND HONORABLE DISMISSAL

Prolonged leave of absence must be sought by written petition to the proper faculty, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired. An indefinite leave of absence will in no case be granted.

A student must apply for leave to be absent, or for an excuse for having been absent from any college exercises other than an examination, to the officer of instruction in charge of such exercise; unless, for unavoidable cause, the student is obliged to absent himself from all college exercises for one day or for several days, in which case the dean will issue a written excuse for leave. Leave to be absent from an examination must be sought by written petition to the proper faculty.

Leave to be absent or an excuse for absence does not, in any case, absolve the student from doing the work covered by his class during his absence, to the satisfaction of the instructor in charge.

Students who discontinue any of their work without formal leave of absence do so at the risk of having their registration privileges curtailed or entirely withdrawn.

Honorable dismissal, indicating that the student while in good standing has voluntarily severed his connection with the University, should be sought by written petition to the proper faculty. Without such petition, no record of honorable dismissal will be made.

## DEGREES

### FIRST DEGREES

The degrees of Bachelor of Arts, Bachelor of Agriculture, Bachelor of Science, Graduate in Pharmacy, Doctor of Veterinary Medicine, Doctor of Dental Surgery, and Bachelor of Science in Civil, Mechanical, Electrical and Mining Engineering, are conferred after the satisfactory completion of the respective courses.

Under authority of Act No. 2467, the University confers the degrees of Graduate in Nursing and Graduate in Midwifery, under certain conditions, upon graduates of the Philippine Training School for Nurses in Manila. For particulars regarding the courses in this school, application should be made to the superintendent of the school.

### SECOND DEGREES

The degree of Master of Arts or of Master of Science will be granted after a course of approved study under the direction of the committee of the university council on graduate study. (See page 30.)

The degree of Master of Science in Civil, Mechanical, Electrical, or Mining Engineering will be granted to a Bachelor of Science in the corresponding course upon satisfactory completion of the prescribed year of work in the College of Engineering.

The degree of Bachelor of Laws will be granted upon graduation from a four-year course in the College of Law.

The degree of Master of Laws will be conferred, after a course of one year in the College of Law, upon students holding the degree of Bachelor of Laws.

The degree of Bachelor of Science in pharmacy will be granted on graduation from a four-year course in the School of Pharmacy.

The degree of Doctor of Medicine will be granted upon graduation from a five-year course in the College of Medicine and Surgery.

The degree of Doctor of Tropical Medicine will be given after a course of one year, and the degree of Doctor of Public Health after a course of two years in the Graduate School of Tropical Medicine and Public Health. (See page 203.)

#### TUITION FEES

##### COLLEGE OF MEDICINE AND SURGERY

A tuition fee of ₦50 a semester is charged for the courses leading to the degree of Doctor of Medicine.

A tuition fee of ₦10 a semester is charged for the courses leading to the degree of Doctor of Dental Surgery.

A tuition fee of ₦30 a semester is charged for the courses leading to the degree of Graduate in Pharmacy and Bachelor of Science in Pharmacy.

##### COLLEGE OF LAW

A tuition fee of ₦50 a semester is charged for the courses leading to the degree of Bachelor of Laws.

A tuition fee of ₦50 is charged for the law review course.

The fees for special courses for peace officers and justices of the peace are ₦15 for one summer session or ₦5 a subject.

Students of other colleges taking courses in the College of Law amounting to less than ten units a semester will be charged a tuition fee of not exceeding ₦5 a unit a semester.

##### COLLEGE OF LIBERAL ARTS

A tuition fee of ₦30 a semester is charged during the first two years for the courses leading to the degree of Bachelor of Arts. For three or more years for higher degrees a fee of ₦40 a semester is charged.

A tuition fee of ₦5 is charged for the summer course with the usual deposits and laboratory fees charged to regular students.

##### COLLEGE OF EDUCATION

A tuition fee of ₦25 a semester is charged to regular students, and of ₦5 a subject a semester to special students.

A tuition fee of ₦20 a semester is charged in the University High School.

A tuition fee of ₦5 is charged for the summer course with the usual deposits and laboratory fees charged to regular students.

## CONSERVATORY OF MUSIC

The tuition fee for regular students in the Conservatory of Music is ₱15 a semester. Special students shall pay a fee of ₱12 a month, for which they shall not receive more than two hours of instruction a week.

## LABORATORY FEES

A fee of ₱5 a semester is charged in all laboratory or technical courses giving three units of credit for a semester and ₱10 per semester in those giving more than three units of credit for a semester.

## DEPOSITS

A deposit of ₱20 is required in the College of Medicine and Surgery.

Each student of the Colleges of Education, Liberal Arts, Engineering, and Veterinary Science is required to deposit ₱15 in addition to the regular fees with the secretary on matriculation.

In the College of Agriculture each student is required to make a deposit of ₱15 with the exception of "pensionados" and those supporting themselves by rendering service to the college.

These deposits are for the purpose of covering any loss of apparatus, supplies, books, etc., or any damage to University property which may properly become a charge against the students.

Whenever a charge is made against the deposit of a student, he is automatically required to deposit an additional sum sufficient to bring the deposit up to the original amount. At the beginning of each semester, as a prerequisite of registration, each student must be prepared to deposit such amount as may be necessary to bring his deposit up to the original amount of ₱15 or ₱20, in case any deduction has been made on account of loss or breakage.

## MISCELLANEOUS FEES

A fee of ₱5 is charged for delayed registration.

A fee of ₱5 is charged for any change in registration from one college to another.

A fee of ₱5 is charged for all diplomas and certificates except in the case of all "second-class midwives."

A fee of ₱10 is charged for each special examination.

An athletic fee of ₱1 a semester is charged every student in the Colleges of Education, Liberal Arts, Agriculture, Engineering, Veterinary Science, Medicine, and Law, and in the Conservatory of Music.

All students who are not residents of the Philippine Islands shall pay a tuition fee of ₱150 a year.

All fees and deposits must be paid on matriculation and before admission to classes, provided, that the president may, in his discretion, permit payment to be deferred until such time as he may deem advisable, the student to submit a promissory note for the amount of such fees or deposits, properly indorsed by two responsible persons.

#### SCHOLARSHIPS

A free scholarship, consisting of free tuition fees for a period of one academic year, is granted to the valedictorian graduating from each high school, trade school, commercial school, or such other private schools of the same standing in the Philippine Islands.

A free scholarship, consisting of free tuition fees for a period of one academic year, is granted to the student second in rank (salutatorian) to the valedictorian graduating from the schools mentioned in the preceding paragraph, provided that such student is unable, on account of his financial condition, to pay the required tuition fees and is so certified to the satisfaction of the president of the University by the director or principal of the school from which the student has graduated; and provided further that the recipient shall perform in the University such kind of work as may be assigned to him by the president.

Formal application for these scholarships should be made in writing and in advance of registration, and the application should be accompanied by a certificate signed by the principal or director of the school from which the applicant has graduated. This scholarship is granted only on the condition that the student meets all the requirements for admission to the University.

A free scholarship, consisting of free tuition fees for a period of one academic year, is granted to students of the University of the Philippines who on graduation receive any degree "with the highest honors" or "with honors." This scholarship will be granted in any college or school of the University in which the student desires to continue his studies, provided that the work previously done by him and the degree granted meet the entrance requirements of such college or school.

In the College of Veterinary Science there are twenty scholarships provided under Act No. 2302 of the Third Philippine Legislature. In addition to these, there are several municipal and provincial scholarships available to students in said college

as well as two made possible through the generosity of Mr. Mariano Limjap.

#### EXPENSES

The expense of textbooks, instruments, etc., varies from ₱25 to ₱100 per annum.

The cost of living in Manila varies from ₱20 to ₱30 a month.

A fair estimate of the yearly expenses is from ₱360 to ₱720 but much depends on the personal tastes of the student.

#### MILITARY DRILL

Military training is a part of the curricula of the different colleges and schools of the University, and all male students are required to take up the course for two years, except those who are exempted therefrom by the Exemption Board. Attendance is governed by the same rules applicable to regular students. Examinations are held and grades reported.

#### CAPS, GOWNS, AND REGALIAS

##### REGULATIONS CONCERNING COMMENCEMENT EXERCISES AND OTHER UNIVERSITY FUNCTIONS

The University of the Philippines has adopted and approved for its official academic processions, meetings, and commencement exercises the following styles of caps, gowns, and regalias:

The gowns shall be in black and of three types as follows:

The Bachelor's gown of worsted stuff with long pointed sleeves.

The Master's gown of silk with long closed sleeves, square at the end, and coming well below the knee the arm coming through a slit near the elbow.

The Doctor's gown like a pulpit or judge's gown with full round open sleeves, faced with velvet, and three bands of velvet on the sleeves.

The Bachelor and Master of Arts to wear a black tassel on the caps. The Bachelor and Masters of Laws and Science to wear a tassel on the cap of the color appertaining to the department of learning to which their degrees appertain.

The color being as follows:

Arts and letters, white.  
Theology, scarlet.  
Laws, purple.  
Philosophy, blue.  
Science, gold yellow.  
Fine Arts, brown.  
Medicine, green.  
Music, pink.  
Engineering, orange.

Pharmacy, olive.  
Dentistry, lilac.  
Veterinary Science, gray.  
Forestry, russet.  
Library Science, lemmon.  
Pedagogy, light blue.  
Oratory, silver gray.  
Commerce and Accountancy,  
drab.

The hoods to be worn are to be lined with the color representing the official colors of the University from which the candidate receives his degree, and in addition thereto is to bear a chevron, double or triple chevron, showing the color of the department of learning to which the degree pertains.

A gold or gold-yellow tassel on the caps is to be worn by the president, deans, and Doctors of Philosophy, Tropical Medicine, Science, and Laws.

Only candidates for the degrees of Bachelors, Masters, or Doctors, and the certificate from the College of Education and the School of Pharmacy shall participate in the commencement exercises of the University.

Only candidates for the degrees of Doctors, Masters, and Bachelor of Laws shall receive at the commencement exercises the approved hood appertaining to said degrees.

The commencement exercises for all graduates of the University, excluding those of the Forest School, School of Nursing, Conservatory of Music, and School of Fine Arts, are held on the same day and only once a year.

The deans of the different colleges shall present the graduates in their respective colleges, provided, that the director of the School of Pharmacy shall present his candidates in his school. Other schools under the control of the University will hold a separate commencement on a date as may be fixed by the president on the recommendation of the dean. The members of the teaching staff of the University shall wear at the commencement exercises their own caps and gowns as used in the universities where they were graduated.

#### JUNIOR COLLEGE OF LIBERAL ARTS

The establishment of the Junior College of Liberal Arts in the city of Cebu as a department of the College of Liberal Arts was authorized by the Board of Regents at its meeting of May 3, 1918. The curriculum of this Junior College is the same as that of the College of Liberal Arts.



THE UNIVERSITY OF THE PHILIPPINES

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THE COLLEGE OF LIBERAL ARTS

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EIGHTH ANNUAL ANNOUNCEMENT AND CATALOGUE

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## FACULTY OF THE COLLEGE OF LIBERAL ARTS

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IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

CONRADO BENITEZ, Ph. B., M. A., LL. B.,  
Dean, Professor of Economics, Chief of the Department.

RHEINART PARKER COWLES, B. A., Ph. D.,  
Resigned as Dean. Professor of Zoology, Chief of the Department.

AUGUSTU P. WEST, B. A., Ph. D.,  
Professor of Chemistry and Chief of the Department.

AUSTIN CRAIG, B. L., M. L., M. A.,  
Professor of History and Chief of the Department.

ELMER DREW MERRILL, B. S., M. S.,  
Professor of Botany and Chief of the Department.

LOUIS FRANKLIN SNOW, Ph. B., B. A., Ph. D.,  
Professor of English and Chief of the Department.

WALTER W. MARQUARDT, B. A.,  
Professorial Lecturer on Education.

FRANK ALTON SHAILER, B. A.,  
Professorial Lecturer on Life Insurance and Actuarial Science.

APOLINARIO BALTAZAR, B. S., C. E.,  
Professorial Lecturer on Mathematics.

JULIO FRANCIA B. S., C. E.,  
Professorial Lecturer on Mathematics.

OMAR M. SHUMAN,  
Lecturer on Banking Practice and Foreign Exchange.

NAJEEB MITRY SALEEBY, M. D.,<sup>1</sup>  
Professorial Lecturer on History.

VICENTE FABELLA, A. B., Ph. B., C. P. A.,  
Professorial Lecturer on Accounting.

MARY POLK, B. A., M. A.,  
Lecturer on Library Science.

ANTONIO DE LAS ALAS, LL. B., LL. M.,  
Lecturer on Municipal Government.

WILLIAM H. BROWN, Ph. D.,  
Associate Professor of Botany.

RANDALL ADAMS ROWLEY, B. S.,  
Professor of Geology.

MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S.,  
Director, School of Pharmacy and Professor of Chemistry.

WALTER ROBERT SHAW, B. A., M. A., Ph. D.,  
Associate Professor of Botany.

MAXIMO M. KALAW, A. B., LL. B.,  
Assistant Professor of Political Science and Chief of the Department.

WILLIAM TATUM HILLES, B. A., M. A.,  
Associate Professor of English.

GEORGE W. ST. CLAIR, B. A., M. A.,  
Associate Professor of English.

LANAME E. BENNETT, B. A.,  
Assistant Professor of English.

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<sup>1</sup> Resigned.

H. OTLEY BEYER, A. B., A. M.,  
Assistant Professor of Anthropology and Ethnology.

ARTEMAS LAWRENCE DAY, B. S., M. A.,  
Assistant Professor of Zoology.

LEANDRO H. FERNANDEZ, Pd. B., Ph. B., M. A.,  
Assistant Professor of History.

SOL FELTY LIGHT, B. A., M. A.,  
Assistant Professor of Zoology.

ARSENIO N. LUZ, B. A.,  
Assistant Professor of Spanish.

OTTO JOHNS SCHEERER, M. A.,  
Assistant Professor of German.

GEORGE M. CASSIDY,  
Physical Director.

PAUL R. PEARL, A. B.,  
Assistant Professor of English.

JOSÉ I. DEL ROSARIO, A. B., Pharm. Lic., M. S.,  
Assistant Professor of Chemistry.

WILLIAM ANDREW WEIDMANN, B. A.,  
Assistant Professor of English.

LAWRENCE DILLER WHARTON, B. A., M. A.,  
Assistant Professor of Zoology.

LUIS RIVERA, B. A., M. A.,  
Assistant Professor in Sociology.

MARIANO D. GANA, LL. B.,  
Instructor in Economics.

PAULINO GUELLAS, B. A., LL. B.,  
Registrar, Junior College of Liberal Arts, Cebu.

GLEN RUSSELL,  
Instructor in English and French, Junior College of Liberal Arts, Cebu.

EMILIO NATIVIDAD, B. A., B. S. A.,  
Instructor in German.

ANTONIO VITEREO, B. A.,  
Instructor in English.

ANITA P. FISCHER, Ph. G.,  
Instructor in French.

TOMAS CONFESOR, Ph. B.,  
Instructor in Economics.

EMETERIO ROA, B. A.,  
Instructor in Mathematics.

ANDREA MARIANO, B. A., B. S. E.,  
Instructor in Mathematics.

LUIS P. UYCHUTIN, B. A., Ph. B., J. D.,  
Instructor in Oriental History.

CECILIO ALINCASTRE, B. A., B. S.,  
Instructor in Chemistry and Mathematics, Junior College of Liberal Arts, Cebu.

ENCARNACION ALZONA, B. A., B. S., M. A.,  
Instructor in History.

WILLIAM REICH, B. A.,  
Assistant in Mathematics.

AMANDO CLEMENTE, B. A., M. S.,<sup>1</sup>  
Assistant in Chemistry.

PILAR PEREZ HERRERA, Pharm. G., B. S.,<sup>1</sup>  
Assistant in Chemistry.

ELISEO HERVAS, B. A., Lic. in Phil. & Letters,  
Assistant in Spanish.

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<sup>1</sup> On leave.

LINO JOSÉ Y DE JESUS, B. A., Pharm. G., B. S.,  
Assistant in Botany.

JOSE S. REYES, B. A.,  
Assistant in Political Science.

JOSÉ K. SANTOS, Pharm. G.,  
Assistant in Botany.

MARIA R. VALDEZ, A. B., B. S.,  
Assistant in Geography.

FILOMENO MARAVILLAS, B. A.,  
Assistant in Spanish.

ZOILA MONTES, Phar. G.,  
Assistant in Chemistry.

For instruction in mathematics and physics, see Faculty, College of Engineering, and  
for that in education, see Faculty, College of Education.



## COLLEGE OF LIBERAL ARTS

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The Board of Regents, on June 6, 1910, authorized the granting of the Bachelor's degree in the College of Liberal Arts on the completion of two years of specified work. However, in March, 1918, the following resolution was approved by the Board of Regents:

The four-year course is required for the degree of bachelor of arts according to the courses of study already approved by the University Council, and the title of Associate in Arts is conferred upon the students completing sixty units in two years' work chosen according to the rules already approved by the University Council; *provided, however*, That new students matriculating next June for the college year 1918-19 shall not be governed by this new requirement, and that they shall be entitled to receive the degree of B. A. at the end of two years and upon the completion of sixty units.

Provision was also made on January 30, 1911, for granting the Master's degree to holders of the Bachelor's degree on the completion of three additional years of more specialized and advanced study.

The College of Liberal Arts offers courses not only to those who seek culture and breadth of education, but also to students preparing for technical work in the sciences, commerce, government, and library control. It also makes provision for special students who are not candidates for degrees.

### ADMISSION

As evidence that they have satisfactorily pursued the subjects required for admission, candidates may take the entrance examinations given by the University (see next section), or may present certificates accepted by the University as equivalent for all or any part of their subjects.

Every applicant for admission to the College of Liberal Arts in case he has previously attended some other college or university without graduating must file with the Secretary of the University a certificate of his honorable dismissal from that institution.

For privileges extended to applicants for admission presenting advanced credit, see "Advanced Standing."

## ENTRANCE EXAMINATIONS

Examinations in all subjects required for admission to the University will be held at University Hall, Manila, June 18-23, 1919.

Permission to take these examinations must be secured from the chairman of the university committee on admission at least two weeks before the date of the examination. Permits will be sent by mail upon application.

No examination of candidates for admission will be held by the University at any other time or place.

A schedule of the university entrance examinations may be obtained from the chairman of the committee on admissions.

Students deficient in any of the subjects required for admission who may, in spite of such deficiencies, be admitted, *must make up all deficiencies within one year.*

## SUBJECT MATTER OF THE ENTRANCE EXAMINATIONS

## ENGLISH

[5 units]

The examination will consist of two parts:

1. *English Rhetoric and Composition*, 3 units.—The writing of compositions on assigned subjects designed to test the candidates' training in written expression. The examiner will consider particularly the following essentials: Spelling, punctuation, and use of capital letters; corrections of faulty syntax; idiomatic use of words; structure of sentences and paragraphs. The examinations will be based on the course of study as outlined by accredited schools in the Philippines.

2. *English Literature*, 2 units.—(a) Silas Marner and one of the plays of Shakespeare. The play selected for the entrance examination for 1917 is *As You Like It*. (b) *The Lady of the Lake*, *Sohrab and Rustum*, *Ode to Duty*, *Gettysburg Address*, *Macaulay's Essay on Johnson*.

## HISTORY

[3 units]

(a) *General History*, 1½ units.—The essential features of Greek and Roman history; the outlines of ancient Oriental history; early Mediæval history to the death of Charlemagne; the rise and fall of the Holy Roman Empire; feudalism; the difference between Mediæval and Modern history; the elements of Modern history to the end of the seventeenth century. Text-book: Myer's *General History*.



(b) *United States History*,  $\frac{1}{2}$  unit.—From the European discovery of the new world, with special attention to the development of the British Empire in America during the seventeenth and eighteenth centuries. After the Revolution, only the history and civil government of the United States need to be studied. Textbook recommended: Thomas' United States History.

(c) *Colonial History*,  $\frac{1}{2}$  unit.—A concise summary of the history of colonization in ancient and modern times; the colonial possessions of great modern colonizing nations; the various forms of colonial government. Textbook: Yule's Colonial History.

(d) *Government*,  $\frac{1}{2}$  unit.—American government from colonial times to the present. Textbook: Ashley's American Government. Reference: Woodrow Wilson's The State.

#### MATHEMATICS

[4 units]

*Elementary Algebra*,  $1\frac{1}{2}$  units [required].—A thorough knowledge of the four fundamental operations with rational expressions; factoring, including the determination of the highest common factor and the solution of equations; common multiples; fractions; the binomial theorem for positive integral exponents (without proof); theory of exponents; radicals, including the extraction of the square root of polynomials and of numbers; the solution of equations of the first degree (numerical and literal, integral, and fractional) involving one or more unknown numbers; quadratic equations, solved both by factoring and by completing the square; and simple cases of simultaneous equations, one of which is quadratic. Textbook recommended: Milne's High School Algebra.

*Plane Geometry*, 1 unit [required].—The usual theorems and constructions contained in the best textbooks on this subject, including the general properties of plane rectilinear figures, the circle and the measurement of angles, similar polygons, areas, regular polygons, and the measurement of the circle; the solution of original exercises, including loci problems, and the mensuration of lines and plane surfaces. Textbook recommended: Wentworth-Smith's Plane Geometry, sec. ed.

*Solid Geometry*,  $\frac{1}{2}$  unit.—The usual theorems and constructions contained in the best textbooks on this subject, including the relation of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle; the solution of original exercises, including loci problems; and the mensuration of sur-

faces and solids. Textbook recommended: Wentworth's Solid Geometry.

*Plan Trigonometry*,  $\frac{1}{2}$  unit.—The definitions and relations of the six trigonometric functions as ratios; circular measurement of angles; proofs of the principal formulas, especially those for the sine, cosine, and tangent, of the sum or difference of any two angles, and of double angles and half angles; the product expressions for the sum of two sines or of two cosines; the transformation of trigonometric expressions by means of these formulas, the use of inverse functions, and the solution of right and oblique triangles, together with simple applications. Textbook recommended: Wentworth's Plane Trigonometry.

*Review of Arithmetic*,  $\frac{1}{2}$  unit.

### ECONOMICS

[1 unit]

A study of economic conditions in the Philippines, five periods a week throughout the year. Textbook: Miller's Economic Conditions of the Philippines.

### LATIN

[4 units]

1. *Latin Grammar and Composition*, 1 unit.—The inflections; the simpler rules for composition and derivation of words, syntax of cases and the verb; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive;

2. *Cæsar and Composition*, 1 unit.—Any four books of the Gallic War (to be read with Greenough, O'Ooge, and Daniel's Second Year Latin).

3. *Cicero*, 1 unit.—Six orations. The four against Catiline, for Archias, and one other.

4. *Virgil*, 1 unit.—Six books of the *Æneid*.

### SPANISH

[2 units]

1. *Spanish Grammar and Composition*, 1 unit.—The rudiments of grammar, including the conjugation of the regular and the more common irregular verbs, the inflections of nouns, adjectives and pronouns, and the elementary rules of syntax; mastery of all but the rare irregular verb forms and of the simpler uses of the modes and tenses; exercises containing illustrations of the principles of grammar; practice in translating Spanish into English, and English variations of text into Spanish.

2a. *Elementary Spanish Literature*,  $\frac{1}{2}$  unit.—The reading and accurate rendering into good English of from 200 to 250 pages of graduated texts, with translation into Spanish of easy variations of the sentences read.

2b. *Advanced Spanish Literature*,  $\frac{1}{2}$  unit.—The reading, in addition to the elementary work, of from 400 to 500 pages of modern prose from different authors (a total with the elementary requirement, of 600 to 750 pages).

### PHYSIOGRAPHY

[ $\frac{1}{2}$  unit.]

The study of physiography or physical geography should occupy five periods a week for one-half year. In order to attain the best results, a considerable portion of the time should be spent in making observations and sketches in the field. Special attention should be given to the action of atmospheric agents upon the earth and to local meteorology.

The examination is intended to test the student's knowledge of the various agencies and forces which affect the surface of the earth, rather than to emphasize a mass of more or less isolated facts. Textbook: Davis's Physical Geography.

### COMMERCIAL GEOGRAPHY

[ $\frac{1}{2}$  unit.]

As outlined by the 1912 bulletin on the secondary course of study, issued by the Director of Education.

### PHYSICS

[1 unit]

Students offering physics for entrance must show an acquaintance with the more important phenomena and with the principles involved in their explanation. They must, in addition to a year's work with the textbook, have completed a year of laboratory practice and must be prepared to work simple numerical problems upon the laws of falling bodies; upon the pendulum; upon properties of liquids and gases, including the determination of density; upon thermometry and calorimetry, including specific heats of fusion and liquefaction; upon the relation of current and electromotive force and resistance; upon velocity, wave length, and resonance in sound; upon refractive indices, focal lengths, and the size and position of images in optics. The student must understand and be able to use the metric system in measurement and computation.

The laboratory work offered should be chiefly quantitative in character, and should consist of at least forty exercises or experiments of the character given in Nicols' "Outlines of Physics," or other works similar to this in grade and method. *The laboratory work prescribed above must have been performed by the student individually, in evidence whereof he must present his laboratory notebook at the time of examination. He must, moreover, be prepared to describe intelligently the method pursued and the results obtained in the experiments which he has performed.* Textbook: Millikan and Gale's First Course in Physics.

### ZOOLOGY

[1 unit]

Elementary zoölogy should be a study of the natural history, external characters, and relationship of animals, not a course in anatomy. Students ought to make a collection of at least 200 species of insects, representing not less than 12 orders, and of 100 species belonging to other classes than insects. The student should classify his collection as far as the orders. It should be borne in mind that no textbook exists which is adapted to Philippine zoölogy, and therefore the adopted text must be a guide to work and should not be slavishly followed. The collection should serve as a basis for observation on habits, environment, and adaptations, and also furnish part of the material needed for detailed laboratory study. The course should occupy five double periods a week for one year, divided as follows:

*Invertebrate Zoölogy* (28 weeks).—Three laboratory periods a week should be devoted to the observation of living and preserved forms, and to a limited amount of dissection.

This laboratory practice should at least include a study of all of the following: Amœba, vorticella, paramœcium, euglena, sponge, sea anemone, jelly-fish, coral, liver-fluke, tapeworm, ascaris, hookworm, lingula, starfish, brittle-star, sea-urchin, sea cucumber, earthworm, leech, prawn, crab, hermit-crab, barnacle, cyclops, locust, cockroach, mantid, dragon-fly, electric-light bug or squash-bug, scale, cicada, fly, mosquito, butterfly, coconut beetle, wasp, ant, termite, scorpion, spider, tick, centipede, clam or mussel, snail or slug, squid.

*Vertebrate Zoölogy* (12 weeks).—A study of the external characters, classification, geographical distribution, and natural history of fish, amphibia, reptiles, birds, and mammals, with a special consideration of Philippine forms. Dissection should be limited to one form, either a fish, lizard, or rat.

*The candidate must present his laboratory notebook, certified by the teacher of the course, at the time of the examination.*  
Text recommended, Linville and Kelly Elementary Zoölogy.

#### BOTANY

[1 unit]

Students offering botany for an entrance subject should have devoted at least five periods a week for one year to a course equivalent to that outlined by Copeland in Bulletin No. 24 of the Bureau of Education. Of this time two or more periods each week should be double periods given to laboratory or field work.

In the laboratory and field work careful notes and drawings should be made. These should be made directly from plants. In the preparation of an herbarium of fifty species or more, the student should distinguish clearly between notes obtained in the field and from the plants, and information from lectures and books.

*The candidate must present his laboratory notebook, certified by the teacher of the course, at the time of the examination.*

#### GENERAL BIOLOGY

[1 unit]

Students offering general biology for an entrance subject should have devoted at least five double periods a week for one year to the course. Of this time at least three periods each week should be double periods given to laboratory or field work. Laboratory work should be done upon plant and animal specimens and a notebook should be carefully kept of all laboratory work.

*The candidate must present his laboratory notebook, certified by the teacher of the course, at the time of the examination.*

Textbook: Hunter's Essentials of Biology.

#### LABORATORY NOTEBOOKS

The notebooks required of all candidates for admission must contain the student's own record of his laboratory experiments, written up in the laboratory, and be presented at the time of the examination. Upon the cover of every notebook there must be attached a statement, signed by the teacher, similar in form to the following:

I hereby certify that the accompanying notebook is the original record of the experiments performed by.....  
..... in the ..... laboratory of  
the ..... School, during the school period  
from ..... to .....

All note books will be returned to the candidate upon application at any time within one year after the examination.

#### SCHOOL CERTIFICATES

Certificates of work in public and private schools, in or out of the Philippine Islands, may be accepted in lieu of examinations for subjects covered by the certificates, but only on condition that the applicant has completed a full course, has been duly graduated after at least one year of continuous work in the school. *Provided, always, that the university authorities are satisfied regarding the standing of the school.*

The application (Form U. P. No. 1) for the admission of a student by certificate must give the grades received by the student for the secondary school subjects, and must be indorsed by the principal of the school.

This application must be accompanied by full and specific information with regard to the completeness and thoroughness of the studies and courses in which instruction is given. If a catalogue or circular is published, a copy thereof should also be furnished.

Certificates will be accepted from provincial high schools giving a complete four-year course, according to the outline of courses published by the Director of Education, and those private schools which are certified by the Secretary of Public Instruction as doing work of an equal standard: *Provided that—*

(1) The status of every undergraduate student is probationary during his first year of residence in the College of Liberal Arts, and his final allowance of matriculation credit will depend upon his work during this probationary year.

(2) The scholarship records in the College of Liberal Arts of the first-year students, from each of the accredited schools, will be kept in such a way as to show the standing of the school in scholarship, as reflected by its representatives in the University. This record will be made use of in determining the status of the school as a possible candidate for future accrediting.

(3) The University does not engage in advance always to accept the certificates of any private school. The previous acceptance of such certificates merely raises the presumption that similar certificates may be accepted again, but does not establish a permanent right to such acceptance. Certificates from private schools whose students prove to be imperfectly fitted will ultimately not be considered.

Graduates of the secondary course in the Philippine School of

Arts and Trades will be admitted without conditions to the preparatory engineering course, College of Liberal Arts. They will, however, be required to take courses in history and other academic subjects in place of some courses in mathematics, drawing, and shop work. In this way they will satisfy all requirements for entrance to and graduation from the College of Liberal Arts.

Recommended graduates of secondary schools who wish to postpone their entrance to the University should send their recommendations, with a specific request for extension, to the secretary of the University. Extension may be granted for one year, with the possibility of renewal, upon request. Recommendations become invalid if not presented within twenty months after graduation.

#### GENERAL PROVISIONS

All diplomas, certificates, and statements offered in lieu of university entrance examinations should be sent by mail to the secretary of the University on or before June 15 of each year.

Application for credit in all subjects for which credit is desired must be made at the time of the admission of the applicant; it should not be postponed to any later date in his course, and no certificate will be considered after the end of the first semester of attendance.

*Certificates are accepted for the subjects of physics, botany, zoölogy, and general biology only on condition that the applicant send to the secretary his notebook, with the teacher's statement attached, as described in the foregoing account of the university entrance examinations in these subjects, and the notebook be approved by the head of the proper department in the University.*

The notebook will be returned to the candidate upon application at any time within one year.

#### ADVANCED STANDING

When a student matriculates in the College of Liberal Arts, he shall be given advanced credit for any specific course offered in the curriculum of that college upon presentation of satisfactory evidence to the Chief of the Department under which the course is given showing that he has previously completed the full equivalent of the course. In awarding the credit, the Chief of the Department shall specify the particular course for which credit is given and the number of units covered by the said credit.

When a student shall present evidence that he has pursued any subject for a sufficient time to have accomplished a definite progress in that subject equivalent to a certain number of units of University credit, but the work pursued is not the equivalent of any particular course offered in the University, the head of the department, under which this subject is given, may award to the student advance credit in the form of general credit in the subject pursued. The award by the chief of the department shall show the number of units of credit awarded and that it is general credit.

Upon any matriculant showing evidence that indicates to the Dean the probability that he is entitled to advance credit in any subject, the Dean shall furnish to the matriculant a form to be presented to the Chief of the Department by whom such credit would be awarded. The student will present this form to the chief of the department together with evidence of the work performed and for which credits is desired. The chief of the department shall examine such evidence and shall enter upon the blank form a statement showing the amount of credit awarded. The chief of the department may require of the student an oral examination without fee to determine his proficiency. The blank with the evidence attached shall be returned by the student to the Dean by whom it shall be transmitted to the Secretary for official record.

Applications for advance credit shall be made not later than July 15 following matriculation, and shall be returned to the Dean not later than September 1 of the same year; provided that the faculty may, upon petition of the student, extend this time.

#### REGISTRATION EACH SEMESTER

At the beginning of each semester every student must obtain a certificate of registration from the secretary and no student, after being once admitted to the University, will be allowed to register after the close of the registration period, except by special permission of the faculty concerned.

#### REGISTRATION OF STUDENTS

Students register for the work in the College of Liberal Arts at the time prescribed by the college. No credit will be allowed for work not so registered. To promote prompt registration, a fee of ₱5 is charged those who seek to register



later than the specified date of registration unless previously excused by the president of the University.

No person will be admitted as a student to the exercise of any professor or instructor except as authorized by the official certificate of registration furnished to each student by the dean and secretary subject to the approval of the proper adviser.

Every student is required to attend all his class exercises and to satisfy the instructor in each of his courses of study, in such way as the instructor may determine, that he is performing the work of the course in a satisfactory manner.

Any instructor, with the approval of the dean, may at any time exclude from his course any student who, in his judgment, has neglected the work of the course. Any student thus excluded shall be recorded as having failed in the course of study from which he is excluded, unless the faculty shall otherwise determine.

#### CHANGE OF REGISTRATION AND ENTRANCE DEFICIENCY

1. Students registering in the College of Liberal Arts for the first time must hand in their preliminary cards, with the list of subjects for the semester, at the Dean's office on or before the third day of instruction.

2. Students may make changes in their list of subjects only during the first two weeks of instruction, and then only with the approval of their adviser and of the Dean, on payment of the fee required for change of registration.

3. After the end of the second week of the semester, no student shall be allowed change of registration either in course of study or in single subjects except in extraordinary cases to be decided by the Dean.

4. Students allowed by the Dean to drop any subject within the first two weeks of the semester shall not be given a grade by the instructor; students dropping any subject without the Dean's consent shall be given a grade of 5.

5. No student whose record has been below grade 2 in any subject taken during the preceding term will be allowed to register for more than fifteen hours.

6. Students deficient in any of the subjects required for admission into the University who, in spite of such deficiencies, have been admitted, on failure to make up these deficiencies within one year, shall not be allowed to register in any subject except in those which constitute their entrance deficiencies.

Provided that this rule shall not apply to special students who are not candidates for degrees.

#### INSTRUCTION

The College of Liberal Arts is divided into a lower division known as the Junior College and upper division known as the Senior College.

#### THE JUNIOR COLLEGE

Students who have satisfied the requirement for entrance into the College of Liberal Arts register in the Junior College where two years of study are offered leading to the title of Associate in Arts.

#### REQUIREMENTS FOR THE TITLE OF ASSOCIATE IN ARTS

##### TERMS AND HOURS

The requirements for the title of Associate in Arts are two years of study and, in addition to the prescribed amount of athletics and military drill, the completion of at least sixty hours of work, under the rules governing the choice of studies. In the case of the courses preparatory to law, medicine, engineering, and pharmacy, more than 60 units may be required. Students who register in any course offered by the College of Liberal Arts will not be allowed to change to another before the following semester.

When a student has received surplus entrance credit (see section on Advanced Standing); there will be deducted from the hours required for graduation the number of hours his surplus entrance credit may warrant, and he will be considered to have been in residence for the period corresponding to the number of hours for which he is given credit on entrance.

A student admitted to the College of Liberal Arts from another college of the University of the Philippines or from any other institution of collegiate rank shall be regarded as having completed the number of terms and of hours to which his records entitle him. He will receive all the privileges of students who have completed the same number of terms and hours by residence in the college. In order, however, to obtain the title of Associate in Arts he must have been in residence at least two semesters in the College of Liberal Arts, and in that college only.

## CHOICE OF STUDIES

Of the 60 units required for the title of Associate in Arts all students must take the following:

Group.	Subjects.	Units.	Group.	Subjects.	Units.	Group.	Subjects.	Units.
I	English .....	6		Botany .....			Philosophy .....	
	Latin .....			Zoölogy .....			History .....	
II	French .....	6	III	Chemistry .....	6	V	Government .....	6
	German .....			Geology .....			Education .....	
	Spanish .....		IV	Physics .....			Economic .....	
				Mathematics .....	6		Sociology .....	

Athletics, 8 units.<sup>1</sup>

Of the 60 units necessary for graduation, twenty-four must be earned in a single group.<sup>2</sup>

## GRADUATION WITH HONORS

The degree of Associate "with marked distinction" will be granted to students in the two-year course who obtain a grade of 1 in not less than 90 per cent of all subjects in their course and a grade of 2 in all other subjects. The degree of Associate "with distinction" will be granted to students in the two-year course who obtain a grade of 1 in not less than 80 per cent of all subjects in their course and a grade of 2 in all other subjects. The degree of Bachelor of Arts "with highest honors" will be granted to students in the regular course who have obtained a grade of 1 in not less than 75 per cent of all subjects taken during residence in the College and a grade of 2 in all other subjects. This is equivalent to an average grade of 1.25 or better. The degree of Bachelor of Arts "with honors" will be granted to students in the regular course who have an average grade of 2 or better for all subjects taken during residence in the College.

## THE PREPARATORY LAW COURSE

The title of Associate in Arts from the Junior College, or its equivalent, is required for entrance to the College of Law.

<sup>1</sup> These units will not count toward graduation.

<sup>2</sup> Unless otherwise stated in the catalogue, no credit will be allowed for a single semester of any course designated as continuing "throughout the year." A student who receives a passing mark or who is conditioned in the first semester of a course in a language must continue that course during the second semester of the same year in order to obtain credit toward graduation, unless he is excused by the dean.

In accordance with the action by the Board of Regents the following preparatory law course has been adopted.

#### FIRST YEAR

First semester :	Units.	Second semester :	Units.
English 1.....	3	English 1.....	3
Spanish 1.....	3	Spanish 1.....	3
History 4.....	3	Mathematics 4.....	3
History 2.....	3	Philosophy 1.....	3
Political science 1.....	3	Political science 2.....	3
Mathematics 1.....	3	History 5.....	3
Total .....	18	Total .....	18

#### SECOND YEAR

First semester :	Units.	Second semester :	Units.
English 5.....	3	English 5.....	3
Philosophy 2.....	3	Spanish 2.....	3
Spanish 2.....	3	Physics 2.....	3
Political science 3.....	3	Sociology 1.....	3
Physics 2.....	3	Philosophy 3.....	3
Economics 1.....	3	Political science 5.....	3
Total .....	18	Total .....	18

#### NEW COURSE

##### FIRST YEAR

First semester :	Units.	Second semester :	Units.
English 1.....	3	English 1.....	3
Spanish 1.....	3	Spanish 1.....	3
Philosophy 1.....	3	Philosophy 2.....	3
Political science 1.....	3	Political science 2.....	3
Mathematics 1.....	3	Mathematics 4.....	3
Total .....	15	Total .....	15

##### SECOND YEAR

First semester :	Units.	Second semester :	Units.
Spanish 2.....	3	Spanish 2.....	3
Political science 3.....	3	Political science 5.....	3
English 2.....	3	English 2.....	3
History 2.....	3	History 5.....	3
Science.....	3	Science.....	3
Junior House of Representatives.....	1	Junior House of Representatives.....	1
Total .....	16	Total .....	16

#### THE PREPARATORY MEDICAL COURSE

The minimum requirement for admission to the College of Medicine and Surgery is the satisfactory completion of the Preparatory Medical Course in the College of Liberal Arts, University of the Philippines, or its equivalent.

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
English 1.....	3	English 1.....	3
German 1.....	3	German 1.....	3
Biology 1.....	3	Biology 1.....	3
Physics 2-M.....	3	Physics 2-M.....	3
Chemistry 1.....	3	Chemistry 1.....	3
Mathematics 1.....	3	Botany 1 or Mathematics 4.....	3
Total .....	18	Total .....	18

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
English 5 or Latin 2.....	3	English 5 or Latin 2.....	3
German 2.....	3	German 2.....	3
Physics 3.....	3	Physics 4.....	3
Chemistry 2.....	3	Chemistry 2.....	3
History 2.....	3	Botany 1 or 2.....	3
Botany 1 or 2.....	3	Philosophy 3.....	3
Total .....	18	Total .....	18

## NEW COURSE

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
English 1.....	3	English 1.....	3
French 1 or German 1.....	3	French 1 or German 1.....	3
Biology 1.....	3	Biology 1.....	3
Chemistry 1.....	3	Chemistry 1.....	3
Mathematics 1.....	3	Mathematics 4.....	3
Total .....	15	Total .....	15

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Physics 2-M.....	4	Physics 2-M.....	4
French 2 or German 2.....	3	French 2 or German 2.....	3
Chemistry 2.....	3	Chemistry 2.....	3
Chemistry 3.....	3	Botany 1.....	3
History 2.....	3	History 5.....	3
Total .....	16	Total .....	16

## THE PREPARATORY COMMERCE COURSE

In order to prepare students for the Course in Commerce the following two years of study leading to the title of Associate in Arts is offered. The completion of this course of study or its equivalent, in the discretion of the Dean, in addition to the regular Course in Commerce (see p. 72) will be required of all who matriculate on or after July 1, 1917, as candidates for the degree of Bachelor of Science in Commerce.

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
English 1 (composition).....	3	English 1 (composition).....	3
Spanish 1 (grammar, composition, reading, conversation).....	3	Spanish 1 (grammar, composition, reading, conversation).....	3
History 2 (the democratic move- ment in the nineteenth century, 1815-1878) .....	3	History 3 (contemporary europe)....	3
Physiography 1 (college physical geography) .....	3	Physiography 1 (college physical geography) .....	3
Mathematics 1 (advanced algebra)..	3	Mathematics 2 (advanced algebra)..	3
History 4 (Philippine history).....	3	History 5 (Philippine history).....	3
Total .....	18	Total .....	18

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Economics 1 (principles of econo- mics) .....	3	Sociology 1 (principles of socio- logy) .....	3
English 5 (general literature).....	3	English 5 (general literature).....	3
Spanish 2 (literature).....	3	Spanish 2 (literature).....	3
Geography 1 (commercial geogra- phy) .....	3	Economics 5 (introduction to ac- counting) .....	2
Physics 2 (general physics).....	3	Physics 2 (general physics).....	3
Economics 4 (general economic his- tory) .....	3	Economics 2 (economic develop- ment of the Philippines).....	4
Total .....	18	Total .....	18

## NEW COURSE

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
English 1.....	3	English 1.....	3
Spanish 1.....	3	Spanish 1.....	3
Physiography 1 or other science.....	3	Physiography 1 or other science.....	3
Mathematics 1.....	3	Mathematics 2.....	3
History 2.....	3	History 5.....	3
Total .....	15	Total .....	15

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Economics 1.....	3	Economics 2.....	3
Economics 4.....	3	Economics 5.....	3
Political science 4.....	3	Sociology 1.....	3
Spanish 2 .....	3	Spanish 2 .....	3
Geography 1, or Mathematics, or other science.....	3	Geography 1, or Mathematics, or other science.....	3
Total .....	15	Total .....	15

## THE PREPARATORY ENGINEERING COURSE

The Preparatory Engineering Course leads to the title of Associate in Arts. Students completing this course will be admitted to the College of Engineering with advanced credit. Those who can afford the time are advised to take this course before entering the College of Engineering.

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 6.....	4	Mathematics 6.....	4
English 1.....	3	English 1.....	3
Spanish 1 or 2.....	3	Spanish 1 or 2.....	3
Economics 1.....	3	Economics 2.....	3
History 1.....	3	History 8.....	3
Total .....	16	Total .....	16

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 7.....	6	Mathematics 7.....	6
Physics 2-E.....	3	Physics 2-E.....	3
French 1.....	3	French 1.....	3
Drawing, elementary mechanical.....	3	Drawing—Descriptive geometry.....	6
Shop, woodwork.....	3	Total .....	18
Total .....	18		

## NEW COURSE

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
English 1.....	3	English 1.....	3
Spanish 1 or 2.....	3	Spanish 1 or 2.....	3
Economics 1.....	3	Economics 2.....	3
History 2.....	3	History 6.....	3
Mathematics 6.....	4	Mathematics 6.....	4
Total .....	16	Total .....	16

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 16.....	6	Mathematics 16.....	6
Physics 2-E.....	3	Physics 2-E.....	3
French 1 or German 1.....	3	French 1 or German 1.....	3
Shop 1.....	3	Shop forge.....	4
Total .....	15	Total .....	16

Mathematics 6 and 7 form a continuous course consisting of algebra, plane trigonometry, analytical geometry, differential and integral calculus.

## THE SENIOR COLLEGE

Three years of work, leading to the degrees of Master of Arts and Master of Science, are offered in the upper division of the College of Liberal Arts, known as the Senior College.

Admission to the Senior College is conditioned upon the completion of the Junior College course of the College of Liberal Arts of the University of the Philippines, or of an equivalent amount of work elsewhere.

## THE FOUR-YEAR B. A. COURSE

According to the resolution of the University Council, as approved by the Board of Regents, the completion of 120 units,

chosen according to rules specified below will be required for the Bachelor of Arts degree.

Of the 120 units required for the degree of Bachelor of Arts, all students must take the following:

Group.	Subjects.	Units.	Group.	Subjects.	Units.	Group.	Subjects.	Units.
I	English .....	15						
	Latin .....		III	Botany .....			Philosophy .....	
	French .....	12		Zoölogy .....	15		History .....	
II	German .....			Chemistry .....		V	Education .....	15
	Spanish .....		IV	Geology .....			Economics .....	
				Physics .....			Sociology .....	
				Mathematics .....	6		Anthropology .....	
							Political Science .....	

Athletics, 8 units, but not included in the 120 units. Of the 120 units necessary for graduation, 42 must be earned in a single group; the balance of the 120 units may be taken in one or more than one group, subject to the approval of the adviser. Of the 15 units required in Group III, 6 shall be a laboratory course. Of the 15 units required in Group V, 3 shall be in Philosophy 1 (Psychology) and 3 in Philosophy 2 (Logic). After the Commencement of 1919, there will be no degree of Bachelor of Arts conferred unless the student shall have completed 4 years' work as outlined above.

#### THE DEGREES OF MASTER OF ARTS AND MASTER OF SCIENCE

Under the authority of the Board of Regents, graduate students may register in the University and pursue their studies under the direction of a committee of the university council.

Students who have been granted the degree of Bachelor of Science or who have completed two years of properly chosen work in addition to the requirements in force for the degree of Associate in Arts in the University of the Philippines, or who can demonstrate that their training is the equivalent of two years of properly chosen work beyond these requirements will be admitted to candidacy for the master's degree, subject to the approval of the committee on graduate study.

Each student before presenting himself as a candidate for a master's degree must have a reading knowledge of French or German and in the case of senior college students of the College of Liberal Arts, must have completed 20 units in a major subject of study.



After having been admitted to candidacy for the master's degree by a vote of the committee on graduate study, the student shall pursue a course of study approved by this committee. This work shall be carried on under an adviser appointed by the committee on graduate study.

The following are the general requirements for the granting of the master's degree:

(a) The student shall be in residence in the University for at least one year after admission to candidacy.

(b) He shall present a thesis which shall be on some subject approved by the chief of the department in which the subject is chosen and by the adviser appointed by the committee on graduate study.

(c) The thesis shall represent one-third of a full year's college work and shall be passed upon by a committee appointed by the committee on graduate study.

(d) A bound copy of the thesis, prepared according to the instructions issued by the secretary of the University, shall be presented by the candidate to the University and shall be preserved in the official records of the University, provided, that in lieu of presenting a typewritten thesis to become a part of the official records of the University, any candidate may elect to deposit a similarly bound printed thesis; and as a guarantee of such presentation, if the thesis is not yet printed, he must deposit with the Secretary of the University the sum of ₱50 which will be forfeited if the printed thesis is not presented within one year.

(e) The student shall complete at least 90 units of advanced subjects, or of work which may be considered as equivalent, beyond the requirements for the degree of Bachelor of Arts in the University of the Philippines.

Persons satisfactorily complying with these conditions will be granted degrees as follows:

(a) The degree of Master of Science in case the thesis deals with a scientific or technical subject.

(b) The degree of Master of Arts in case the thesis deals with a subject which is one of those usually recognized as "the humanities."

[NOTE.—For the degree of Master of Science in Chemistry and Botany particular requirements have been adopted by the University Council. (See pages 72, 75).]

## WORK IN OTHER COLLEGES

It may be advantageous for certain students of the senior college to take courses in the Colleges of Agriculture, Medicine, Law, and Veterinary Science. Such courses will be counted toward the degree of Master of Arts.

## FURTHER OPPORTUNITIES FOR GRADUATE STUDY

For those who have received the Master's degree, there are exceptional opportunities in several departments to do graduate or research work.

*Botany.*—The herbarium of the Bureau of Science, which is rapidly being increased, now contains over 125,000 mounted specimens, of which approximately two-thirds are Philippine and the remainder extra-Philippine. The material is arranged by families, genera, and species, so that everything on hand is readily accessible for study. This collection, with the accompanying library facilities of the Bureau of Science, form one of the best centers for taxonomic research outside of Europe and North America.

The extra-Philippine material is for the most part from the Tropics, and in developing this part of the herbarium especial attention has been given to securing representative botanical material from the Indo-Malayan region in general; the herbarium contains exceedingly valuable collections of plants from India, southern China, Formosa, Cochin China, the Malay Peninsula and Archipelago, Australia, and Polynesia.

The Philippine collection is the largest and most valuable extant, containing representatives of nearly all the species definitely known to grow in the Archipelago. It is especially rich in types and cotypes. The great bulk of the herbarium is made up of the phanerogamic collection, but the cryptogamic section includes exceedingly extensive collections, for the most part identified, of ferns and fern allies, as well as large collections of named mosses, scalemosses, fungi, lichens, and algæ.

The Bureau of Science is thoroughly equipped for those electing to carry on work in plant physiology and in systematic or economic mycology. The botanical library is very extensive and contains a practically complete set of books applying to the flora of the Philippines and to the Indo-Malayan region as a whole. The list of general botanical publications is extensive, and the library is rich in sets of periodicals, proceedings of societies, etc.

The College of Agriculture at Los Baños is situated in a

remarkably favorable spot for botanical work. The college buildings are at the very foot of Mount Maquiling, and not distant from the shore of Laguna de Bay.

Maquiling rises to a height of about 1,500 meters above the lake, and the trip to the summit and return can readily be made in a day. Within easy reach is the much higher mountain, Banajao. "From the lake to the mossy forest on the summit of Maquiling, every great tropical formation, except the mangrove and the alpine scrub, is present within convenient reach. Aside from the large number of introduced plants on the campus, there is an extraordinarily large local flora; and this vegetation never rests."

*Chemistry.*—The privileges of the excellent research equipment of the Bureau of Science and the facilities for advanced work offered by its staff and by the library are open to advanced students of chemistry who desire to complete their courses for advanced degrees or to prepare a thesis on chemical subjects. The privileges of such study will be granted upon application to the Board of Regents for admission to the course and upon application to the Director of the Bureau of Science for admission to the laboratories of the latter institution. The work of the Bureau of Science appears in the Philippine Journal of Science, which is published by the Bureau of Science of the Philippine Government, and investigators will be given every opportunity for carrying on their work and for publication. So many topics exist which especially relate to conditions in the Tropics that this opportunity offers an enticing field to chemists desiring to broaden their training.

*Zoölogy.*—The zoölogical laboratory is situated within a few hundred yards of the shore of Manila Bay. Many places of interest to zoölogists are easily accessible by short steamer journeys. A marine biological survey has been instituted by the University and the Bureau of Science. Investigators who desire to accompany the field expeditions will be welcomed. The Bureau of Science has large and fairly complete collections of Philippine birds, reptiles, and fishes, the Zoölogical Department of the College of Liberal Arts has a large collection of corals and crustacea and the College of Agriculture an extensive collection of insects. The scientific library contains nearly all of the principal sets of zoölogy literature.

*History.*—The Philippine Library, which includes the Tavera, Retana, Compañía Tabacalera, and Zulueta collections, possesses by far the best collection of Filipiniana in existence; and

as the early history of the Philippines was closely connected with the beginning of European interest in the Far East, it is probable that in this field also the library leads. The convents of the religious orders contain records of the first missionary efforts in Asia and the Government archives have many papers bearing on early political affairs. It is believed that nowhere else will the student find such opportunities in primary sources for studying the beginnings and progress of European and American influence in the Far East, a subject of increasing interest since the modernizing of the Orient.

*Anthropology.*—The complex racial and linguistic problems afforded by the Philippines and the neighboring oriental countries offer an unusually rich field for original research in anthropology. In addition to the unique library facilities mentioned under "History," students in this department have the advantage of free access to the collections of the Philippine Museum, the Ateneo de Manila, and the University of Santo Tomás. The ethnological literature in the library of the Bureau of Science, and in certain private collections especially rich in unpublished manuscripts, may also be used by graduate students.

#### THE COURSE IN CHEMISTRY

The course leading to the degree of Bachelor of Science in chemistry is intended to prepare students for technical positions. In the fourth year of the course a large amount of work can be elected to fit the student for the special line of chemical work which he desires to pursue. The fifth year leading to the degree of Master of Science is designed to give students a broader knowledge of the subject and to prepare them for work in Government and technical laboratories and teaching positions.

#### PRESCRIBED COURSE OF STUDY

FIRST YEAR			
First semester:	Units.	Second semester:	Units.
Chemistry 1.....	3	Chemistry 1.....	3
Mathematics 6.....	4	Mathematics 6.....	4
English 1.....	3	English 1.....	3
German 1.....	3	German 1.....	3
Physics 2.....	3	Physics 2.....	3
Total .....	16	Total .....	16

SECOND YEAR			
First semester:	Units.	Second semester:	Units.
Chemistry 2.....	3	Chemistry 2.....	3
Mathematics 16.....	5	Mathematics 16.....	5
German 2.....	3	German 2.....	3
History 2.....	3	History 6.....	3
Physics 3.....	3	Physics 4.....	3
Total .....	17	Total .....	17

## THIRD YEAR

First semester:	Units.	Second semester:	Units.
Chemistry 3.....	3	Chemistry 4.....	3
Chemistry 5.....	3	Chemistry 5.....	3
Geology 2.....	3	Geology 3.....	3
Botany 2.....	3	Botany 2.....	3
French 1.....	3	French 1.....	3
Zoölogy 2.....	3	Elective .....	3
Total .....	18	Total .....	18

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Chemistry 6.....	2	Chemistry 6.....	2
Chemistry 7.....	3	Chemistry 7.....	3
Chemistry 8.....	3	Chemistry 8.....	3
Chemistry 10.....	2	Chemistry 10.....	2
Drawing 1.....	3	Drawing 2.....	6
Electives .....	4	Electives .....	2
Total .....	17	Total .....	18

## NEW COURSE

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
Chemistry 1.....	3	Chemistry 1.....	3
Mathematics 6.....	4	Mathematics 6.....	4
English 1.....	3	English 1.....	3
German 1.....	3	German 1.....	3
Physics 2.....	3	Physics 2.....	3
Total .....	16	Total .....	16

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Chemistry 2.....	3	Chemistry 2.....	3
Mathematics 16.....	6	Mathematics 16.....	6
German 2.....	3	German 2.....	3
History 2.....	3	History 6.....	3
Total .....	15	Total .....	15

## THIRD YEAR

First semester:	Units.	Second semester:	Units.
Chemistry 3.....	3	Chemistry 4.....	3
Geology 2.....	3	Geology 3.....	3
French 1.....	3	French 1.....	3
Zoölogy 2.....	3	Botany 2.....	3
Physics 3.....	3	Physics 4.....	3
Total .....	15	Total .....	15

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Chemistry 8.....	3	Chemistry 8.....	3
Chemistry 5.....	3	Chemistry 5.....	3
Drawing 1.....	3	Drawing 2.....	6
Botany 2.....	3	Electives .....	3
Electives .....	4	Total .....	15
Total .....	16		

## FIFTH YEAR

(Leading to the degree of Master of Science.)

Students who have received the degree of Bachelor of Science in chemistry may pursue an extra year of study leading to the degree of Master of Science. Elective courses in advanced analytical, organic, inorganic, and other chemical studies, together with such courses in other departments as may be elected with the consent of the chief of the department of chemistry, constitute the major portion of the work of this year, which is designed to prepare the student for the professional work he has chosen. A considerable portion of the time will be devoted to research work, which will be made the basis of a thesis. This thesis must be completed in form ready for publication, and must be approved by the chemical faculty, before graduation, subject to the general rules of the University concerning theses.

## THE COURSE IN COMMERCE

## ORGANIZATION

The Course in Commerce in the College of Liberal Arts was organized at the beginning of the school year 1916-1917 by the Board of Regents, at the suggestion of business men and public officials of the country.

## THE AIM

The regular two-year course as outlined below aims, first, to give students a comprehensive, many-sided survey of business and administrative facts and experience; second, to develop a power of accurate analysis which will prepare the student to think complicated business problems through to the end; third, to maintain an atmosphere in which business and administrative problems will be regarded in a public-spirited way.

The chief aim of the course is to train business executives, including not only men who will engage in independent business, but also those who will be needed by the growing demands of the Government service. Indeed, as greater administrative responsibilities are placed in the hands of the Filipinos the duty of providing for the training of executives becomes more and more apparent, and the commerce course is the Government's agency to turn out the men needed.

## EVENING COURSES FOR PERSONS EMPLOYED.

In order to make such a training available for mature persons who are regularly employed, the department offers instruction in the late afternoon, and evening hours.

## INSTRUCTION BY BUSINESSMEN AND REGULAR INSTRUCTORS

The teaching staff of the Department consists of: (1) Regular members of the University faculty. (2) Successful businessmen who are secured for special courses in subjects upon which they are able to speak with authority. The Philippine National Bank is in charge of the courses in banking.

## REQUIREMENTS FOR ADMISSION

The regular course consists of two years of study as outlined below, and leads to the degree of Bachelor of Science in Commerce. Those students who register for this course in July, 1917, or later must have obtained the title of Associate in Arts by completing the Preparatory Course in Commerce, or a course which the dean approves as equivalent.

Special students who are high-school graduates or have had sufficient experience in the line of work they want to take up, will be admitted, and, upon completion of the work, will be given certificates of efficiency.

## SCHEDULE OF COURSES

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
Economics 22 (problems of production) .....	3	Economics 10 (public finance).....	3
Economics 21 (problems in political economy) .....	3	Economics 14 (business organization) .....	3
Economics 6 (elementary accounting) or Economics 8 (life insurance) .....	3	Economics 7 (intermediate accounting) or Economics 8 (life insurance) .....	3
Chemistry 1 (general chemistry) or Mathematics 4 (plane trigonometry) .....	3	Chemistry 1 (general chemistry) or Mathematics 104 (commercial operations) .....	3
Law 1 (elementary law).....	2	Economics 11 (money and banking) .....	3
Political Science 4 (Philippine Government) .....	3	Mathematics 40 (statistical methods) .....	2
Total .....	17	Total .....	17

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Economics 15 (banking practice, including foreign exchange).....	3	Law (insurance law).....	1
Law (conveyancing).....	2	Economics 23 (problems of transportation) .....	3
Law (commercial law, including elements of contracts, agencies, partnership, corporations, and negotiable instruments).....	2	Law (commercial law).....	2
Economics 12 (Philippine labor conditions) .....	3	Economics 20 (agricultural economics) .....	3
Economics 25 (trade, domestic and foreign) .....	3	Economics 19 (advanced accounting-theory, practice and auditing) or Economics 24 (actuarial science) .....	3
Economics 18 (accounting practice and auditing) or Economics 24 (actuarial science).....	3	Economics 26 (seminar in business) .....	3
Law (taxation).....	1	Thesis .....	2
Total .....	17	Total .....	17

## NEW COURSE

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
Economics 14 (business organization) .....	3	Economics 10 (public finance).....	3
Economics 21 (problems in political economy) .....	3	Economics 22 (problems of production) .....	3
Economics 6 (elementary accounting) .....	3	Economics 7 (intermediate accounting) .....	3
Law (commercial).....	2	Economics 15 (banking practice including foreign exchange) or Economics 8 (life insurance).....	3
Economics 11 (money and banking) or Economics 8 (life insurance)....	3	Law (commercial).....	2
Mathematics 104 (graphic algebra)..<	2	Mathematics 40 (statistical methods) .....	2
Total .....	16	Total .....	16

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Economics 12 (Philippine labor conditions) .....	3	Economics 23 (problems of transportation) .....	3
Economics 25 (trade, domestic and foreign) .....	3	Economics 20 (agricultural economics) .....	3
Economics 18 (accounting practice and auditing).....	3	Economics 19 (advanced accounting theory, practice and auditing) .....	3
Law (taxation).....	1	Economics 26 (seminar in business) .....	3
Private Finance.....	2	Advanced Banking or Economics 24 (insurance) or Law or Elective .....	3
Advanced Banking or Economics 24 (insurance) or Law or Elective .....	3	Thesis .....	1
Thesis .....	1	Total .....	16
Total .....	16		

## COURSE IN BIOLOGY

The purpose of the Course in Biology is to offer a liberal education with special training in biological subjects. The first two years of prescribed study lead to the title of Associate in Arts, the chosen subjects being designed to give the student a good foundation in general science. Two additional years of prescribed study lead to the degree of Bachelor of Science in Biology and are intended to prepare students for positions as teachers of biology, for positions in the Government service which require a thorough training in biological subjects, and for more advanced work in botany or zoölogy. A fifth year of study will be offered, subject to the approval of the Committee on Graduate Study, leading to the degree of Master of Science.

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
Biology 1 (elementary biology).....	1	Biology 1 (elementary biology).....	3
Chemistry 1 (general inorganic chemistry) .....	3	Chemistry 1 (general inorganic chemistry) .....	3
Physics 2 (general physics).....	3	Physics 2 (general physics).....	3
English 1 (composition).....	3	English 1 (composition).....	3
German 1 (elementary German)....	3	German 1 (elementary German)....	3
Mathematics 1 (college algebra)....	3	Mathematics 40 (statistical methods) .....	3
Total .....	18	Total .....	18



## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Zoölogy 4 (teachers' course in zoölogy) .....	3	Zoölogy 2 (microscopic technique) ..	2
Botany 4 (teachers' course in Botany) .....	3	Botany 4 (teachers' course in botany) .....	3
Chemistry 2 (compounds of carbon) .....	3	Chemistry 2 (compounds of carbon) .....	3
Geology 1 (general geology) .....	3	Geology 1 (general geology) .....	3
History 2 (European history) .....	3	History 3 (European history) .....	3
German 2 .....	3	German 2 .....	3
<b>Total</b> .....	<b>18</b>	<b>Total</b> .....	<b>17</b>

## THIRD YEAR

First semester:	Units.	Second semester:	Units.
Zoölogy 4a (general invertebrate zoölogy) or Botany .....	3	Zoölogy 4a (general invertebrate zoölogy) or Botany .....	3
Zoölogy 11 (elementary cytology and cellular embryology) .....	2	Protozoölogy 6a (medical school) ..	2
Zoölogy 6 (comparative embryology of vegetables) or Botany ..	3	Botany 4 (plant histology) .....	3
Botany 3 (elementary plant physiology) .....	3	Botany 3 (elementary plant physiology) .....	3
Geology 4 (historical geology) .....	3	Geology 4 (historical geology) .....	3
Medical Zoölogy 4 (poisonous animals) .....	1	English 4 (history of English literature) .....	3
English 4 (history of English literature) .....	3	<b>Total</b> .....	<b>17</b>
<b>Total</b> .....	<b>18</b>		

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Zoölogy 4b (general vertebrate zoölogy) or Botany .....	3	Zoölogy 4 (general vertebrate zoölogy) or Botany .....	3
Bacteriology 5a (medical school) ..	2	Physiology 2 (medical school) (physiological chemistry) .....	3
Physiology 2 (medical school) (physiological chemistry) .....	3	Zoölogy 5 (comparative embryology of invertebrates) or Botany .....	3
Physiology 3 (medical school) (physiology) .....	3	Anthropology 1 (general anthropology) .....	3
Zoölogy (lectures on heredity) .....	1	Zoölogy (lectures on heredity) .....	1
Library methods .....	1	Education 6 (educational psychology) .....	3
Education 6 (educational psychology) .....	3	<b>Total</b> .....	<b>16</b>
<b>Total</b> .....	<b>16</b>		

## NEW COURSE

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
Biology 1 .....	3	Biology 1 .....	3
Chemistry 1 .....	3	Chemistry 1 .....	3
English 1 .....	3	English 1 .....	3
German 1 .....	3	German 1 .....	3
Mathematics 1 .....	3	Mathematics 4 .....	4
<b>Total</b> .....	<b>15</b>	<b>Total</b> .....	<b>15</b>

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Botany 1 or Zoölogy 4 .....	3	Botany 1 or Zoölogy 4 .....	3
Chemistry 2 .....	3	Chemistry 2 .....	3
Geology 1 .....	3	Geology 1 .....	3
History 2 .....	3	History 3 .....	3
German 2 .....	3	German 2 .....	3
<b>Total</b> .....	<b>15</b>	<b>Total</b> .....	<b>15</b>

## THIRD YEAR

First semester:	Units.	Second semester:	Units.
Zoölogy 4a or Botany.....	3	Zoölogy 4a or Botany.....	3
Zoölogy 11.....	2	Zoölogy 12.....	2
Zoölogy 6 or Botany.....	3	Protozoölogy 6a.....	2
Botany 3.....	3	Botany 3.....	3
Geology 4.....	3	Geology 4.....	3
Medical Zoölogy 4.....	1	English 2.....	3
Total .....	15	Total .....	16

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Zoölogy 4b or Botany.....	3	Zoölogy 4b or Botany.....	3
Bacteriology 5a.....	2	Physiology 2.....	3
Physiology 2.....	3	Zoölogy 5.....	3
Physiology 3.....	3	Anthropology 1.....	3
Zoölogy (lectures on heredity).....	1	Zoölogy (lectures on heredity).....	1
Library methods.....	1	Education 6.....	3
Education 6.....	3	Total .....	16
Total .....	16		

## COURSE IN LIBRARY SCIENCE

The aim of the Course in Library Science is to give a knowledge of books and their uses, with the purpose (1) of helping students in their own studies, and (2) of enabling students to help others in their use of books, especially in the organization and management of libraries.

During the first two years, the courses offered are planned to give instruction and practice sufficient to enable capable students to fit themselves to act as assistants in the larger libraries, or as librarians in charge of the libraries of the colleges of the University, of school libraries, or of provincial and municipal libraries.

Students who finish the first three years' work should be prepared for technical assistants in the larger libraries; those who finish the four years' work should be ready to take up advanced technical and administrative work.

Classes will be held in the University, in the Philippine Library and Museum, and in the Bureau of Science.

One or more general lectures on the use of books and of libraries, open to all students of the College of Liberal Arts, will be given during the year. After the first lectures, at least an hour will be spent in one of the libraries of Manila, where simple practical problems in the use of the catalogue, of reference books, etc., will be assigned and worked out. Not more than twenty students will be admitted to each group for this work.

The first two years of the course will lead to the title of Associate in Arts; four years to the degree of Bachelor of Science in Library Science.

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
English 1 (composition).....	3	English 1 (composition).....	3
Spanish 1 (elementary Spanish)....	3	Spanish 1 (elementary Spanish)....	3
Mathematics 1 (college algebra)....	3	Mathematics 4 (plane trigonometry) .....	3
Science (laboratory course).....	3	Science (laboratory course).....	3
History 2 (the democratic movement in 18th century).....	3	History 3 (contemporary Europe)...	3
Library Science 1 (reference work) .....	3	Library Science 2 (classification and book numbering).....	3
Total .....	18	Total .....	18

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
English 5 (general literature).....	3	English 5 (general literature).....	3
Spanish 2 (intermediate Spanish)...	3	Spanish 2 (intermediate Spanish)...	3
History 6 (oriental history).....	3	History 5 (Philippine history).....	3
Economics 1 (principles of economics) .....	3	Economics 2 (economic development of Philippine Islands).....	3
Philosophy 2 (principles of logic)...	3	Education 2 (principles of teaching) .....	3
Library Science 3 (cataloguing, etc.) .....	3	Library Science 4 (evaluation and selection of books).....	3
Total .....	18	Total .....	18

## THIRD YEAR

First semester:	Units.	Second semester:	Units.
English 4 (history of English literature) .....	3	English 4 (history of English literature) .....	3
German 1, French 1, or Latin 1....	3	German 1, French 1, or Latin 1....	3
Anthropology 1 (general anthropology) .....	3	Sociology 1 (principles of sociology) .....	3
Education 5 (practical teaching)....	3	Education 5 (practice teaching)....	3
Library Science 5 (library practice) .....	3	Library Science 5 (library practice) .....	3
Total .....	15	Total .....	15

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
English 14 (the English novel).....	3	English 13 (Shakspeare).....	3
English 7 (American literature)....	2	English 7 (American literature)....	2
German 2, French 2, or Latin 2....	3	German 2, French 2, or Latin 2....	3
Education 8 (principles of secondary education).....	3	Education 8 (principles of secondary education).....	3
Political Science 1 (principles of political science).....	3	Political Science 5 (oriental governments) .....	3
Library Science 6 (library history)...	3	Library Science 7 (library administration) .....	3
Total .....	17	Total .....	17

## NEW COURSE

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
English 1.....	3	English 1.....	3
Spanish 1.....	3	Spanish 1.....	3
Mathematics 1.....	3	Mathematics 4.....	3
Science (laboratory course).....	3	Science (laboratory course).....	3
Library Science 1.....	3	Library Science 2.....	3
Total .....	15	Total .....	15

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
English 5.....	3	English 5.....	3
History 2.....	3	History 3.....	3
History 6 or 4.....	3	History 5 or 8.....	3
Economics 1.....	3	Economics 2.....	3
Library Science 3.....	3	Library Science 4.....	3
Total .....	15	Total .....	15

## THIRD YEAR

First semester:	Units.	Second semester:	Units.
English 4.....	3	English 4.....	3
German 1, French 1, or Latin 1.....	3	German 1, French 1, or Latin 1.....	3
Anthropology 1.....	3	Sociology 1.....	3
Education 5.....	3	Education 5.....	3
Library Science 5.....	3	Library Science 5.....	3
Total .....	15	Total .....	15

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
English 14.....	3	English 13.....	3
English 7.....	2	English 7.....	2
German 2, French 2, or Latin 2.....	3	German 2, French 2, or Latin 2.....	3
Education 8.....	3	Education 8.....	3
Library Science 6.....	3	Library Science 7.....	3
Thesis .....	1	Thesis .....	1
Total .....	15	Total .....	15

## BACHELOR OF SCIENCE IN GOVERNMENT

Beginning with the academic year 1918-19 a four-year course leading to the degree of Bachelor of Science in Government will be offered in the College of Liberal Arts.

The first two years will be the same as the Preparatory Law Course, provided, however, that students graduating in the regular course leading to the title of Associate in Arts may also be admitted in the discretion of the Dean.

The schedule of courses in the third and fourth years shall be as follows:

## THIRD YEAR

First semester:	Units.	Second semester:	Units.
English 4 (English literature).....	3	English 4 (English literature).....	3
History 6 (Oriental history).....	3	Economics 2 (Economic development of the Philippines).....	3
Political Science 4 (Philippine Government) .....	3	Political Science 7 (political parties) .....	3
Political Science 6 (European Governments) .....	3	Sociology 2 (social ethics).....	3
Spanish 3 (literature).....	3	Spanish 3 (literature).....	3
Junior House of Representatives .....		Junior House of Representatives .....	
Total .....	15	Total .....	15

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Anthropology 1 (general anthropology) .....	3	Administrative law.....	2
Geography 1 (commercial geography) .....	3	Constitutional law.....	3
Political Science 8 (municipal government) .....	2	Economics 10 (public finance).....	3
Political Science 9 (theory and practice of legislation).....	2	Economics 11 (money and banking) .....	3
Public Corporations.....	2	Penology and Criminology.....	1
Public International Law.....	2	Political Science 11 (diplomacy)....	3
Public speaking 3 (oratory).....	2	Taxation .....	1
Junior House of Representatives		Junior House of Representatives	
Political Science—Seminar.....		Thesis .....	
Total .....	16	Total .....	16

## COMBINED COURSE LEADING TO LL. B. AND B. S. IN GOVERNMENT

Students who have completed the preparatory law course or its equivalent and who wish to pursue the five-year combination course in law and government will receive the degree of Bachelor of Laws and Bachelor of Science in Government upon the completion of all the law subjects prescribed in the regular four-year law course and the following additional subjects required in the course leading to the Bachelor of Science in Government:

Political Science 6 (European governments).....	3
Political Science 7 (political parties).....	3
Political Science 8 (municipal government).....	2
Political Science 9 (theory and practice of legislation) .....	2
Political Science 11 (diplomacy).....	3
Economics 2 (economic development of the Philippines) .....	3
Economics 10 (public finance).....	3
Sociology 2 (social ethics).....	3
History 6 (Oriental history) or Anthropology 1 (general anthropology).....	3
English 4 (English literature).....	6
Thesis .....	
Total .....	31

The combined schedule, approved by the Board or Regents, is as follows:

[Those marked (x) are given in the College of Liberal Arts.]

FIRST YEAR			
First semester:	Units.	Second semester:	Units.
Elementary Law.....	2	Obligations .....	6
Institute of Civil Law.....	4	English literature.....	x3
Persons .....	3	Public speaking.....	2
Reading Course I.....		Reading Course II.....	
English literature.....	x3	European governments.....	x3
Junior House of Representatives <sup>1</sup> .....		Junior House of Representatives <sup>1</sup> .....	
Total .....	12	Total .....	14

<sup>1</sup> For students holding the associate title, general course. This subject will be included in the preparatory law course.

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Philippine Government.....	3	Mercantile Law.....	4
Property .....	4	Criminal Law.....	5
Elementary procedure.....	2	Criminal Procedure.....	2
Oratory .....	2	Administrative Law.....	2
Oriental history <sup>2</sup> .....	x3	General anthropology.....	x3
Reading course III.....	.....	Reading Course IV.....	.....
Junior House of Representatives <sup>1</sup> .....	x.....	Junior House of Representatives <sup>1</sup> .....	x.....
Philippine Barristers I.....	.....	Philippine Barristers II.....	.....
Total .....	14 or 11	Total .....	16 or 13

## THIRD YEAR

First semester:	Units.	Second semester:	Units.
Agency .....	2	Bailments .....	2
Civil Procedure.....	5	Evidence .....	4
Private corporations.....	2	Private corporations.....	2
Political parties.....	x3	Sales .....	2
Philippine Barristers III.....	.....	Social ethics.....	x3
Reading course V.....	.....	Economic development of the Phil- ippines .....	x3
Practice Clubs I.....	.....	Philippine Barristers IV.....	.....
Total .....	12	Reading Course VI.....	.....
		Practice Clubs II.....	.....
		Total .....	16

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Land registration and mortgages....	3	Partnership .....	2
Public International Law.....	2	Legal ethics.....	1
Admiralty .....	1	Constitutional Law.....	3
Torts and damages.....	3	Wills, descent, and administration..	3
Municipal governments.....	x2	Taxation .....	1
Total .....	11	Diplomacy .....	x3
		Insurance .....	1
		Total .....	14

## FIFTH YEAR

First semester:	Units.	Second semester:	Units.
Insolvency .....	1	Code review (crimes).....	1
Trial practice.....	3	Code review (Civil Law).....	3
Conveyancing .....	2	Code review (Mercantile Law).....	3
Legal medicine.....	2	Code review (Remedial Law).....	3
Mining and Irrigation Law.....	1	Private International Law.....	3
Public corporations.....	2	Public finance.....	x3
Theory practice of legislation.....	x2	Brief .....	.....
Brief .....	.....	Practice court.....	.....
Practice court.....	.....	Junior Philippine Senate.....	.....
Junior Philippine Senate.....	.....	Thesis, Law.....	.....
Total .....	13	Thesis, Political Science.....	.....
		Total .....	16

NOTE.—The regular course in B. S. in Government is finished in two years (after the associate title) with 66 units, 20 of which are given in the College of Law and 46 in the College of Liberal Arts. In the combined course, the student must obtain all the units (110) required for LL. B. and, in addition, 31 units in the College of Liberal Arts. He is thus exempted from 15 units in the College of Liberal Arts but the College of Law does not excuse him from any subject.

<sup>1</sup> For students holding the associate title, general course. This subject will be included in the preparatory law course.

<sup>2</sup> Every student must take this subject or general anthropology.

## COURSES OF INSTRUCTION

The following courses are offered to students of the College of Liberal Arts:

## ANTHROPOLOGY AND PHILIPPINE LANGUAGES

Assistant Professor BEYER; Mr. LIM.

*Anthropology 1. General Anthropology.*—A general introduction to the whole subject of anthropology, its history, aims, and methods; physical anthropology, archaeology, ethnology, ethnography, and language. The collections in the ethnographical section of the Philippine Museum are used for purposes of illustration.

[3 hours, second semester; 3 units. Assistant Professor BEYER.

*Anthropology 2. Ethnography of Eastern Asia and Oceania.*—Discussion of theories regarding the peopling of Asia and Oceania, and a general survey of the ethnography of these regions. Particular attention is paid to southeastern Asia and Malaysia. Lectures and outside reading. Anthropology 1 should either precede or accompany this course, though not rigidly required as a prerequisite.

[3 hours, first semester; 3 units.  
Assistant Professor BEYER.  
Mr. LIM.

*Anthropology 3. Philippine Ethnography.*—Description of the existing Philippine peoples, and a discussion of the theories as to their origin and development. Lectures and outside reading.

[3 hours, second semester; 3 units.  
Assistant Professor BEYER.

*Anthropology 4. Philippine Languages.*—The first part will consist of a general course in the science of linguistics; and the second part of a general study of the native languages of the Philippine Islands, their phonetics, structure, lexicography, and classification.

[3 hours, second semester; 3 units. Assistant Professor BEYER.

*Anthropology 5. Economic Development of Mankind.*—Discovery; the origin of invention; and the general development of primitive economics. Lectures, outside reading, and study of collections in the Philippine Museum.

[3 hours, first semester; 3 units.  
Assistant Professor BEYER.  
Mr. LIM.

*Anthropology 6. Social Anthropology.*—A general study of the social and mental development of mankind, with especial refer-

ence to the early history of such institutions as marriage, the family, government and law, and the development of beliefs.

[3 hours, second semester; 3 units. Assistant Professor BEYER.

*Anthropology 7 and 8.*—(Not offered in 1918–19.)

#### SENIOR COLLEGE COURSES

*Anthropology 9. The Indo-Oceanic Languages.*—Prerequisite, Anthropology 4.

[3 hours, first semester; 3 units.

*Anthropology 10. Philippine Archaeology.*—Lectures and research. Prerequisites, Anthropology 1 and 2.

[3 hours, second semester; 3 units.

*Anthropology 11. Special Problems in Philippine and Oceanic Anthropology.*—Original research by the student under direction of the instructor.

[5 units per semester.

*Anthropology 12. Special Problems in Asiatic Anthropology.*—Original research by the student under direction of the instructor. The courses in Anthropology 11 and 12 are open to students who have taken Anthropology 1, 2, 3, and 4, and who possess a reading knowledge of Spanish. Either of these courses may be extended throughout the year.

[5 units per semester.

*Anthropology 13. Racial Anatomy of the Philippine Peoples.*—Research under direction of the instructor. Prerequisites, Anthropology 1, 2, and 3, and Zoölogy 1. Courses in Anatomy at the College of Medicine are also recommended.

[5 units per semester.

*Anthropology 14. Research in Criminal Anthropology.*—Prerequisites, Anthropology 1, 3, and the course in Criminology in the College of Law. Other preparation may be required at the discretion of the instructor.

[5 units per semester.

*Anthropology 15. Museum Methods.*—This course is intended as a partial preparation for students who desire to enter museum work. Two lectures and two hours laboratory work per week at the Philippine Museum.

[4 hours, either semester; 3 units. Mr. LIM.

*Anthropology 16. Philippine Folklore.*—A general study of Philippine myths and folk tales, and of their significance. Lectures, reading, and original work.

[3 hours, first semester; 3 units. Assistant Professor BEYER.



*Anthropology 17. Folklore of Eastern Asia and Oceania.*—A study of the myths, fables, and legends of southern and eastern Asia and the Oceanic Islands, and their bearing on the problems of Oceanic ethnology. Lectures and outside reading.

[3 hours, second semester; 3 units. Assistant Professor BEYER.

### BOTANY

Professor MERRILL, Chief of Department; Associate Professor BROWN; Associate Professor SHAW; Mr. JOSÉ, and Mr. J. K. SANTOS.

Courses in botany will be offered to meet the needs of (a) students preparing to become teachers of biological sciences in the high schools of the Philippines; (b) students in the course in pharmacy; (c) students preparing to take up the study of medicine; (d) students desiring work in science without reference to special application in their chosen fields of labor.

For those intending to teach high school biology two semesters of work will be given in the first year of the college course. This will be followed by 20 unit hours of botany courses to be taken during the third and fourth years of the college course, to include a thesis to be prepared in the final year, and to lead to the degree of Master of Arts. Approved field work during a major portion of two vacations will be a requirement for this degree. The completion of a high-school course, including a year of work in biology or botany, is a prerequisite to admission to any of these courses as a candidate for the advanced degree. The flora of Manila affords at all seasons an abundance of fresh material for the study of tropical plants, and the climate permits, with a minimum of difficulty, the cultivation of material under controlled conditions for study in the laboratory, under glass, and in the garden.

For students of pharmacy two semesters of work will be offered in the first year, Botany 2. This is to be followed by courses in pharmacography and pharmacognosy in the second and third years.

*Botany 1. Elementary Botany.*—Laboratory work, lectures, and recitations covering the essentials of elementary botany. This course is designed especially for students in preparatory medicine who are required to take one semester's work in botany.

Textbooks: Ganong, Textbook of Botany, and Brown, Laboratory Manual.

[9 hours, each semester; 3 units for each semester. Associate Professor BROWN.

*Botany 2. Morphology and Classifications of Plants.*—A course designed primarily for students of pharmacy, the work in the

first semester being a general course in the morphology and classification of the cryptogams and the gymnosperms, in the second semester the morphology including general histology and classification of the spermatophytes. In the second semester illustrative material for class work will be drawn from the local flora. Lectures and laboratory work will be supplemented by studies in the field and in the herbarium; each student will be required to prepare a small herbarium. One object of the course is to give students of pharmacy a broad conception of the principles of taxonomy, and the relationships of various groups of plants, as a basis for future work in pharmacography and pharmacognosy.

Textbooks: Ganong, Textbook of Botany; Brown, Laboratory Manual; supplemented in the second semester by Merrill: Flora of Manila.

[9 hours, first semester; 3 units. 9 hours, second semester; 3 units.

Professor MERRILL

*Botany 3. Elementary Plant Physiology.*—Laboratory and field work with reading and occasional lectures on the physiology of vascular plants. A course designed to supplement the high-school course in biology. Open to students who have had high-school botany or Botany 1, 2, or 4.

Textbook: Coulter, Barnes and Cowles, Textbook of Botany. Part II.

[9 hours throughout the year; 6 units. Associate Professor BROWN.

*Botany 4. Teachers' Course in Botany.*—A course designed primarily for students in the School of Education who plan to become teachers of biology. The course is planned to cover the general morphology and classification of Thallophytes, Bryophytes, Pteridophytes, and Spermatophytes, some work in ecology, physiology, taxonomy of the flowering plants, including the preparation of herbarium material, preservation of material for microscopical work, the preparation of microscopic slides, elementary work in staining, etc. Each student will be trained to prepare his own material for study. Special attention will be given throughout the course to the collection of material for laboratory work; the selection of illustrative material from the local flora in relation to the general problems of the teaching of biology; and in methods of growing algae, fungi, ferns, etc. for use in the class-room. The course is open to all students who have had high-school biology, or its equivalent.

Textbooks: Ganong, Textbook of Botany, supplemented by Merrill: Flora of Manila.

[9 hours throughout the year; 6 units.

[Professor MERRILL and Associate Professor BROWN.

*Botany 5. General Botany.*—A lecture and demonstration course designed to cover the general subject of botany, the morphology, classification, and origin of the various groups of plants, and their interrelationships, the history of botany, elementary ecology, physiology, adaptations for pollination, fertilization, dissemination etc., and the characters, origin, and relationships of the Philippine flora. This course is designed for those students *who are not required to take other courses in botany*, but who wish to gain some knowledge of the subject in relation to their general education. No previous work in botany or biology is required.

[3 hours, second semester; 3 units. Professor MERRILL.

*Botany 7. Pharmacognosy.*—A study of the crude vegetable drugs of the United States Pharmacopea. Each student will be provided with a compound microscope for use in the laboratory. The laboratory work will cover the gross and microscopical characters of drugs and include some study of powdered drugs. Identification will receive careful attention and there will be frequent tests of ability to determine drugs. Lectures and tests will cover the main facts of the pharmacography of each drug. The roots, rhizomes, barks, and leaves will be taken up in this semester.

Textbook: Kraemer, Applied and Scientific Pharmacognosy.

[9 hours, first semester; 3 units. Associate Professor SHAW.

*Botany 8. Pharmacognosy.*—A continuation of the preceding course, dealing with the flowers, fruits, seeds, and miscellaneous vegetable and animal drugs of the United States Pharmacopea.

[9 hours, second semester; 3 units. Associate Professor SHAW.

*Botany 10. Vegetable Histology.*—A systematic study of the tissues of vascular plants. Methods of section-cutting and mounting, and the use of reagents and stains.

[First semester; 3 units. Associate Professor SHAW.

#### SENIOR COLLEGE COURSE

*Botany 11. Vegetable Physiology.*—Lectures and laboratory work on the physiology of the vascular plants.

[First semester, 6 hours; second semester, 10 hours; 7 units.  
Associate Professor BROWN.

*Botany 12. Economic Botany.*—A study of the classification and ecology of some of the more important cultivated plants.

*Botany 13. Plant Diseases.*—The fungus and bacterial diseases of cultivated plants and the means of preventing or checking them.

*Botany 15. Ecology.*—(1) The collection and classification of

seed plants to furnish a basis for the study of the ecology of a limited area, including a wide range of plant formations. (2) A study of ecological factors in plant distribution. These are vacation courses to be given at some base from which a series of diverse plant formations may be reached.

[Vacation.

### CHEMISTRY

Professor A. P. WEST, Chief of Department; Assistant Professor J. I. DEL ROSARIO; Assistants: Misses P. P. HERRERA, ZOILA MONTES, and Mr. JOSE FELICIANO.

The Department of Chemistry occupies the south half of the Freer Chemical Laboratory, recently erected, besides the entire space of a recently remodeled building in the ground of the Philippine General Hospital.

The courses of study are designed to meet the necessary requirements of students in the various colleges of the University and of those specializing in chemistry. For students who desire to follow chemistry as a profession, a four-year course is given leading to the degree of Bachelor of Science (see Page 70). A fifth year of study is offered leading to the degree of Master of Science in Chemistry. Students completing the fifth year will be eligible for positions in technical laboratories.

*Chemistry 1. General inorganic chemistry.*—Lectures, recitations, and laboratory work.

[9 hours throughout the year; 6 units. Assistant Professor ———.

*Chemistry 2. The compounds of carbon.*—Lectures, recitations, and laboratory work. Prerequisite 1.

[9 hours throughout the year; 6 units.

Professor A. P. WEST.

Miss P. P. HERRERA.

*Chemistry 3. Qualitative analysis, inorganic.*—Lectures, recitations, and laboratory work. Prerequisite 1.

[9 hours first semester; 3 units.

Assistant Professor J. I. DEL ROSARIO, and Miss P. P. HERRERA.

*Chemistry 4. Quantitative analysis inorganic.*—Lectures, recitations, and laboratory work. Prerequisites 1 and 3.

[9 hours, second semester; 3 units.

Assistant Professor J. I. DEL ROSARIO.

Miss P. P. HERRERA.

*Chemistry 5. Physical chemistry.*—Lectures, recitations, and laboratory work. Prerequisites 1, 2, 3, and 4.

[9 hours throughout the year; 6 units. Assistant Professor ———.

*Chemistry 6. Advanced organic chemistry.*—Prerequisites 1, 2, 3, 4, and 5.

[2 hours throughout the year; 4 units. Professor A. P. WEST.

*Chemistry 7. Organic and inorganic preparations.*—A course for advanced students. Lectures and laboratory work. Prerequisites 1, 2, 3, and 4.

[9 hours throughout the year; 6 units.

Professor A. P. WEST.

Miss P. P. HERRERA.

*Chemistry 8. Applied analytical chemistry.*—Lectures, recitations and laboratory work. Analysis of foods; oils, water, ores, etc., special topics in advanced and applied quantitative analysis to suit individual needs. Minimum nine hours per week laboratory work; three hours laboratory work through one semester being counted as one unit. Prerequisites 1, 2, 3, and 4.

Professor A. P. WEST.

Assistant Professor J. I. DEL ROSARIO.

*Chemistry 9. Industrial chemistry. Inorganic and organic.*—A course devoted to the study of the methods of manufacture and analysis of industrial products. Prerequisites 1, 2, 3, 4, 5, 6, 7, and 8.

[9 hours throughout the year; 6 units.

Professor A. P. WEST.

Assistant Professor J. I. DEL ROSARIO.

## ECONOMICS

### THE COURSE IN COMMERCE

Professor C. BENITEZ, Chief of Department; Messrs. RIVERA, CONFESOR, and GANA; Professorial lecturers; Messrs. SHUMAN, FABELLA.

### GENERAL COURSES

*Economics 1. Principles of Economics.*—General introduction to the study of political economy. The general principles are worked out from a study of practical conditions. Both the social and the individual business points of view are considered.

[3 hours, first or second semester; 3 units.

Professor BENITEZ.

Mr. CONFESOR.

Mr. GANA.

*Economics 21. Problems of Political Economy.*—This course traces the problems of political economy as they have developed, and analyzes the different solutions advanced by writers on economics. It is theoretical and practical.

[3 hours, first semester; 3 units. Professor BENITEZ.

*Economics 101. Rural Economics.*—This course aims to direct the attention of the student to the salient features of our rural problems. The social and the business aspects of the problems are emphasized.

[8 hours, second semester; 3 units. Mr. CONFESOR.

## FINANCIAL STRUCTURE AND FINANCIAL INSTITUTIONS

*Economics 11. Money and Banking.*—This course is mainly descriptive and historical. It includes a survey of the principles of money whether metallic or paper. The second half of the course is devoted to the explanation of the functions of a bank.

[3 hours, first semester; 3 units. Mr. SHUMAN.

*Economics 110. Bank Management.*—This is a technical course, treating of the internal problems of bank organization and management. The emphasis is placed, not upon the routine of bank operation, but upon larger problems of management. The course covers, not only the work of commercial banks, but also of savings banks, bond houses, trust companies, and commercial paper houses. The work of the classroom is supplemented by a number of lectures by practical bankers.

[3 hours, second semester; 3 units. Mr. SHUMAN.

*Economics 111. Advanced Banking.*—This course treats of the banking systems of the leading commercial countries, covering not only the functions of commercial banks, but also those of the many other forms of banking institutions which make up the entire credit structure.

[3 hours, first semester; 3 units. Mr. SHUMAN.

*Economics 15. Banking Practice including Foreign Exchange.*—This is a practical course, treating of the actual operations of the various departments of banks. Commercial banks, savings banks, and trust companies are considered. Specific problems are assigned wherever possible; visits of inspection are made to typical institutions; and the work of the classroom is supplemented by a number of lectures by practical bankers.

Prerequisite: Economics 10, Money and Banking, or sufficient experience with banking practice, in the discretion of the instructor.

[3 hours, second semester; 3 units. Mr. SHUMAN.

*Economics 112. Banking Law.*—In this course are studied the more important legal questions arising in the field of finance and banking. The prime banking functions, whatever the particular type of financial institution, are borrowing and lending and guaranty in its various forms. The greater part of the time in this course will therefore be devoted to the legal problems arising in connection with these functions. The following subsidiary banking relations are also considered; banks as bailees; banks as agents in collecting and otherwise; banks as trustees; exchange; brokerage; and commercial agency.

[3 hours, first or second semester; 3 units.

*Economics 113. Private Finance.*—This is a study of the fundamental principles of financial policy involved in the organization and management of business enterprises, especially the corporation. The more important topics taken up include the financial side of organization and promotion, the amount of capitalization, the choice of different types of securities to be issued, the methods of selling securities and raising additional capital, the financial policy with reference to dividends, surplus, accounting practice, insolvency and reorganization, and the problems and methods of social control of the financial management of corporations.

[3 hours, first or second semester ; 3 units.

Mr. FABELLA.

Mr. CONFESOR.

*Economics 114. Investments.*—A study of the various types of investment; the characteristics of each and their relative fitness to meet the needs of different classes of investors; the methods and sources of information for determining the value of such investments; the general industrial and financial conditions affecting changes in their value; the institutions dealing in them and the attempts on the part of the public to safeguard and regulate investments.

[3 hours, first or second semester ; 3 units.

#### ORGANIZATION AND ADMINISTRATION

*Economics 14. Business Organization.*—The aim of this course is to ascertain the fundamental principles underlying efficiency in the organization and management of a modern enterprise. As such it is elementary in nature and serves as a background for the other courses in organization.

The following topics are discussed in connection with the course:

The different stages in economic evolution—-independent economy, domestic economy, period of town economy, national economy, and international economy.

Business enterprise—its nature, functions, and objects, and its effects upon organization.

Business opportunities and the entrepreneur or enterpriser.

Organization with regard to ownership and the advantages and disadvantages of individual ownership, partnership and coöperations.

The handling of men—employment, discipline, instruction, incentives and welfare.

The systems of organization—Taylor's system, Emerson's system, Time and Staff.

Methods of approach to the solution of internal problems of management.

[3 hours, second semester; 3 units. Mr. CONFESOR.

*Economics 22. Problems of Production.*—This course seeks to acquaint the students with industrial problems and their solutions in such a way as to make them recognize their existence and acquire the habit of mind necessary for a systematic approach to their solution. It also seeks to ascertain the methods and principles of organization and management as applied to production.

Books recommended—Duncan's Principles of Industrial Management.

[3 hours, first semester; 3 units. Mr. CONFESOR.

*Economics 26. Seminar in Business.*—Original investigation of business problems under the direction and guidance of members of the faculty. The problem investigated may be offered as a thesis required for graduation.

[3 hours, second semester; 3 units. Members of the Faculty.

#### LABOR AND MARKETS

*Economics 12. Labor Conditions and Problems.*—This is a general survey of the trade union movement in the various countries of Europe and America, and includes an analysis of Philippine labor conditions.

The study of the administration and policies of the various types of trade and industrial organizations in the United States and the Philippines and of contemporary labor legislation are the attractive features of this course.

[3 hours, first semester; 3 units. Mr. GANA.

*Economics 31. The Manager's Administration of Labor.*—A general survey of the internal problems of business management of labor.

[3 hours, first or second semester; 3 units. Mr. GANA.

*Economics 25. Domestic and Foreign Trade.*—This course aims to acquaint students with the various products and their markets; the relative importance of the different types of retailers, wholesalers, and jobbers; and the fundamental problems in the solution of domestic and foreign trade channels.

Emphasis is given to the study of trade policies of the United



States, England, Germany, and Japan and of the many important problems that confront the foreign trader and consular agent. For this reason the value of this course to those preparing for consular service or such similar work cannot be overemphasized.

[3 hours, first semester; 3 units. Mr. GANA.]

*Economics 32. Philippine Commercial Relations.*—This is an analysis of the commercial relations of the Philippines with foreign countries, including the United States. Most of the important commercial countries are discussed separately, but the subject-matter, in general, is organized under the following heads: (1) The development of commerce with the Philippines; (2) its present status; (3) factors affecting it; (4) commercial prospects.

[3 hours, first or second semester; 3 units. Mr. GANA.]

*Economics 33. Advertising and Salesmanship.*—This course is primarily intended for those who intend to engage in actual business. The first part of the course aims to acquaint the student with different advertising media, the work of the manager, the solicitor, and the service department. Particular emphasis will be given to the study of the various departments of advertising work—such as commercial art, engraving, advertising display, rates of newspapers and magazines and the planning of campaigns. The student is to be expected to prepare an advertising copy from time to time to show the progress he is making in his outside observations.

The second part deals with the qualifications and duties of a salesman. The study of the consumers' and distributors' customs and habits, and of the methods of organizing and opening a new territory; planning the salesman's daily work; preparation for interview; appeals; handling of objections and closing with an order are important features of this part of the course. Lecturers will be invited from time to time.

[3 hours, second semester; 3 units. Mr. GANA.]

*Economics 23. Transportation Problems.*—A practical course intended for students desiring a comprehensive knowledge of ocean and rail transportation.

The first part of the course is devoted to the study of types of railroad organization, the functions of the various departments, particularly the freight traffic department, the different factors and theories in rate-making and the system of rate regulation in the United States and the Philippines.

The remainder of the course is a discussion of ocean terminal facilities and routes. A careful study is also made of the im-

portance of the different trunk lines and the advantages and disadvantages of the Panama and Suez canal routes.

[3 hours, second semester; 3 units. Mr. GANA.

#### COMPUTING AND COMMUNICATING AIDS OF ADMINISTRATION

*Economics 5. Introduction to Accounting.*—This course is designed primarily to prepare students for the courses in accounting. Nevertheless, it is strongly recommended to engineering, law, pharmacy, education, and other students because it deals with common business practice and procedure—an acquaintance with which is essential to professional men. The major portion of the work is confined to the development of the fundamental principles of bookkeeping. Business transactions are analyzed and discussed to determine the basis for the record on the books, the principles to kept in mind regarding the nature of the record; and the books on which the records are made. Sufficient practical exercises are given to afford the students a working knowledge of bookkeeping principles and technique, as well as to give them practice in the preparation of simple financial statements.

This course is noncredit to senior college students. Hence, students intending to enter the courses in commerce should take it while in the junior college. Prerequisite to Elementary Accounting unless the equivalent has been previously taken.

[3 hours, second semester; 3 units. Mr. FABELLA.

*Economics 6. Elementary Accounting.*—A brief review of the principles of bookkeeping is given preliminary to the study of the principles of accounting. Beginning with a single entry set of accounts, the principles are developed until a modern accounting system has been worked out in detail. Among other points, the practice sets illustrate the importance of the classification of accounts and the treatment of accounts peculiar to partnerships and to corporations; use of controlling accounts and subsidiary records; the imprest system and the method of safeguarding cash; methods of handling consignments, notes and bills of exchange; the voucher system; perpetual inventories; and the opening and closing of the books for partnerships and corporations.

The work of keeping the books of accounts is supplemented with additional questions and problems to further illustrate the principles of accounting and the method of preparation and the forms of financial and operating statements.

[3 hours, first semester; 3 units. Mr. FABELLA.

*Economics 7. Intermediate Accounting.*—The work is devoted to the interpretation of accounts viewed with regard to the needs of the business executive rather than to those of the accountant. The formation and interpretation of the balance sheet; the profit and loss statement and its relation to the efficiency of departments and employees; the capital accounts, surplus, reserves, sinking funds, reserve funds,—their use and misuse; depreciation accounts; other accounts appearing on the credit side; assets; methods of valuation; distinction between capital and revenue expenditures; capital assets; intangible assets.

In addition to the problems and questions which will be assigned for home study, Hatfield's Modern Accounting will be freely used as reference.

[3 hours, first or second semester; 3 units. Mr. FABELLA.

*Economics 18. Accounting Practice and Auditing.*—This work is designed to give the students a more thorough knowledge of accounting and the general principles of auditing as part of the training of an accountant and business man.

The preparation and meaning of financial statements; operating statements, manufacturing, trading and profit and loss; statement of profit and income; statements of affairs and deficiency accounts; realization and liquidation accounts; fire loss adjustment; branch house accounts; merger and consolidations.

The purpose of an audit; balance sheet audit; detailed audit; what to do in the course of an audit; verification of capital and current assets; capital and current liabilities; contingent assets and contingent liabilities.

Problems and questions mostly taken from C. P. A. examinations will be assigned for home study.

Reference book—Montgomery's Auditing Theory and Practice.

[3 hours, first semester; 3 units. Mr. FABELLA.

*Economics 19. Advanced Accounting.—Theory, Practice and Auditing.*—The course is designed for those interested in continuing their studies of accounting and for those wishing to go into accounting as a profession.

Accounting systems, organization, and internal check; cost accounts, the distribution of factory burden and other expenses; consolidated statement of profit and loss; the method of showing minority stock-holders interest, determination of the surplus and good will; elimination of intercompany transactions and profits; income tax law and the preparation of returns; special

classes of audit; the duties and responsibilities of auditors; investigations for purposes of credit, purchase, sale or reorganization; auditor's certificate and reports.

Advanced questions and problems will be assigned for home study.

Books recommended—Dickinson's Accounting Practice and Procedure and Montgomery's Auditing Theory and Practice.

[3 hours, second semester; 3 units. Mr. FABELLA.

*Economics 27. Accounting Seminar.*—The course is designed to prepare students to enter the accounting profession. It is conducted in the same manner as the work in an accountant's office. Each student is assigned a certain topic to investigate under the personal guidance of the instructor. Besides the students are expected to be in readiness to go out and spend a number of hours each week making investigations, auditing books, and installing and supervising systems of accounts.

[4 hours, second semester; 4 units. Mr. FABELLA.

*Economics 46. Introduction to Statistics.*—History and development of statistical science; tabulation and averages; graphic methods; accuracy; law of error; theory of correlation; applications to local and foreign phenomena. This course is equivalent to Mathematics 40.

[2 hours, second semester; 2 units. Mr. ROA.

*Economics 47. Statistical Theory and Method.*—A more advanced course in the principles of statistics, involving applications of modern correlation methods. The course is open to students who have had Introduction to Statistics.

[3 hours, first or second semester; 3 units. Mr. ROA.

*Economics 48. Business Correspondence.*—This course offers training in the writing of business letters, viewed as forms of business communication, with primary emphasis on their use as instruments of business administration. The work will be English and Spanish.

[3 hours, first or second semester; 3 units. Mr. CONFESOR.

*Mathematics 104. Commercial Operations, including Graphic Algebra.* (See Mathematics.)

#### RISK AND RISK-BEARING

*Economics 8-A. Life Insurance.*—An introductory course dealing with the nature and uses of life insurance, its scientific foundation, special forms of life insurance, office organization, government supervision, etc. "Life Insurance" by Huebner is

used as a textbook, supplemented by practical problems such as are actually met with in life insurance offices.

[3 hours, first semester; 3 units. Mr. RoA.

*Economics 8-B. Intermediate Life Insurance.*—Continuation of the work in Economics 50, and open only to those who have taken the introductory course.

[3 hours, first semester; 3 units. Mr. RoA.

*Economics 24-A. Actuarial Science.*—A course dealing with the mathematics of finance and life insurance. Subjects discussed are interest and annuities-certain, the theory of probabilities applied to life contingencies, life annuities, net and gross premiums, valuation of policy liabilities. "Practical Lessons in Actuarial Science" by Miles M. Dawson is used as a text-book. A good knowledge of algebra is required of students entering this course.

[3 hours, first semester; 3 units. Mr. RoA.

*Economics 24-B. Actuarial Science.*—Continuation of the work in Economics 24-A, and open only to those who have taken that course. Lectures by men doing actuarial work in insurance companies will supplement the work of the classroom.

[3 hours, second semester; 3 units. Mr. RoA.

#### SOCIAL CONTROL OF BUSINESS (ALSO BUSINESS LAW)

*Economics 70. Programs of Social Reform.*—A general survey of the socialist movement, and a study of the literature of discontent and protest against the existing social order.

[3 hours, first or second semester; 3 units. Mr. RIVERA.

*Economics 71. Industrial Combinations—Trusts.*—A general survey of the rise and growth of trusts in the United States, Great Britain and Europe; the evils which have followed their development, and the remedies proposed.

[3 hours, first or second semester; 3 units. Mr. CONFESOR.

*Economics 10. Public Finance.*—A survey of the entire field of public finance. The course aims to acquaint the students with the accepted modern theories of public expenditure, budgetary legislation, management of public domains and industries, public revenues, and public debts.

[3 hours, second semester; 3 units. Professor BENITEZ.

*Business Law I.*—Business law in general. Its relation to public and private law. The law of property. Law of contracts, with special reference to purchase and sale. Agents, brokers, factors, and commission merchants. Partnerships and corpora-

tions. Constant and thorough drill in concrete examples and principles with the purpose of cultivating intelligent and ready thinking and reasoning in the problems of commercial dealing among business men.

[2 hours, first semester; 2 units. Associate Professor NOBLE.  
MR. GANA.]

*Business Law II.*—The law of negotiable instruments. Usury law and its applications. Land and water transportation. Warehouse receipts. Customs Administrative Act. Insolvency. Special weight laid upon property interests, commercial and legal terms and questions of practical value in business life.

[2 hours, second semester; 2 units. Associate Professor NOBLE.  
MR. GANA.]

Textbooks: Crane, Business Law for Business Men; Huffcut, Elements of Business Law; Bay, Cases on Commercial Law.

*Taxation.*—A study of the law of taxation based on portions of Acts of Congress and the Administrative Code. Assigned cases from the case book and the Philippine Reports.

Textbook: Goodnow's Cases on Taxation.

[First semester, 1 unit. Professor BENITEZ.]

#### DEVELOPMENT OF INDUSTRIAL SOCIETY

*Economics 2. Economic development of the Philippines.*—The course is a general survey of Philippine economic growth, and aims to show the manner and extent to which economic forces have determined the history of the country, to point out how the actual operation of economic principles is illustrated by this history, and to aid in the solution of present-day problems.

[3 hours, second semester; 3 units. Professor BENITEZ.]

*Economics 3. Economic development of the United States.*—

[3 hours, first semester; 3 units. Professor BENITEZ.]

*Economics 4. General Economic Development.*—This course explains the nature and effects of the more important economic changes and achievements in the principal industrial countries of the world, and deals with certain outstanding features of the present industrial society.

[3 hours, first or second semester; 3 units. Professor BENITEZ.]

*Economics 83. Economic development of the Orient.*—

[3 hours, first or second semester; 3 units. Professor BENITEZ.]

#### PHYSICAL ENVIRONMENT OF BUSINESS

(See Geology and Geography for description).

## EDUCATION

Professor FRANCISCO BENITEZ, Dean, College of Education; Mr. W. W. MARQUARDT, Professorial Lecturer on Education; Mr. J. W. OSBORN, Professorial Lecturer on Education; Associate Professor TOWNSEND; Miss TIRONA and Mr. CLAUDIO.

*Education 1.*—History of Education; the growth and development of educational doctrine into its modern form.

[3 hours, first semester; 3 units.  
Professor F. BENITEZ.  
Mr. CLAUDIO.

*Education 2.*—Principles of teaching; a study of the fundamental ideas and their application to the more common subjects of the course of study.

[3 hours, second semester; 3 units. Miss TIRONA.

*Education 3.*—Principles of Education—An interpretation of the problems and aims of education from the standpoint of society.

[3 hours throughout the year; 6 units. Professor F. BENITEZ.

*Education 4.*—Principles of Secondary Education.

[3 hours throughout the year; 6 units. Mr. OSBORN.

*Education 5.*—Practice Teaching, under supervision of the School of Education.

[3 hours throughout the year; 6 units. Miss TIRONA.

*Education 6.*—Educational Psychology; applications of genetic and experimental psychology to education.

[3 hours throughout the year; 6 units. Associate Professor TOWNSEND.

*Education 7.*—Comparative Education; a study of the educational systems of England, France, Germany, and Japan.

[3 hours throughout the year; 6 units. Professor F. BENITEZ.

*Education 8.*—Educational Administration; with special reference to the routine of the public-school system of the Philippine Islands.

[2 hours, first semester; 2 units. 2 hours, second semester; 2 units. Mr. MARQUARDT.

*Education 10.*—History of Education in the Philippines; the evolution of educational practices and institutions in the Philippines.

[2 hours, second semester; 2 units.  
Professor F. BENITEZ.  
Mr. CLAUDIO.

*Education 11.*—Modern Educational Theorists. A critical consideration of the writings of Froebel, Herbart, and Dewey.

[2 hours, first semester; 2 units. Professor F. BENITEZ.

*Education 12.*—Supervision of Instruction in the Public Schools. Lectures, required readings, and discussions. This course will consider the guiding principles for the supervision of the different subjects in the curriculum; constructive criticism of class work of teacher; methods of measuring efficiency; supervision of discipline.

[2 hours throughout the year; 4 units. Associate Professor TOWNSEND.

## ENGLISH

Professor SNOW, Chief of Department; Associate Professors HILLES and ST. CLAIR, Acting-chief of the Department; Assistant Professors WEIDMANN, PEARL and BENNET, and Mr. VITERBO.

*English 1. Composition.*—A practical course in the writing and speaking of English. One day a week is devoted to a study of idiom and to the correction of typical errors; one day to oral expositions of assigned topics; one day to written themes. In addition to the weekly themes, at least four long compositions are required of each member of the class during the year.

Prescribed for all regular first-year students in the College of Liberal Arts.

[3 hours throughout the year; 6 units.

<sup>1</sup> Professor SNOW.  
Associate Professor HILLES.  
Associate Professor ST. CLAIR.  
Assistant Professor WEIDMANN.  
Mr. VITERBO.

*English 6. Technical English.*—A study of the principles of exposition and of oral delivery, with special reference to the needs of prospective engineers; analysis of specimens of technical writing and popular exposition, selected from Bird's Modern Science Reader and from current periodicals; practice in writing and delivering reports.

Prescribed for all regular students in the College of Engineering.

[3 hours, second semester; 3 units. <sup>1</sup> Professor SNOW.

*English 2. Advanced Composition.*—A supplement to the training given in Course 1, intended to develop further the power of exact and lucid statement. Weekly themes and other written exercises on topics assigned by the instructor.

Elective for all students having credit for English 1.

[3 hours, first semester; 3 units. 3 hours, second semester; 3 units.

<sup>1</sup> Professor SNOW.  
Associate Professor ST. CLAIR.

*English 11. Historical English.*—A scientific study of English phonology, accidence, and syntax. Students selecting this course

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<sup>1</sup> Absent on leave.



should have some acquaintance with at least one modern European language besides English.

Elective for all students having credit for English 1. (Not offered 1918-19.)

[2 hours, second semester; 2 units. Associate Professor ST. CLAIR.]

*English 4. History of English Literature.*—A general survey of the development of English literature to the close of the nineteenth century. An historical outline supplementing the study of representative works. Lectures on the great movements and influences in English literature. Weekly reports based on assigned reading.

Elective for all students having credit for English 1.

[3 hours throughout the year; 6 units. Associate Professor HILLES.]

*English 5. General Literature.*—A discussion of masterpieces Occidental and Oriental. Lectures, extensive reading, and two long reports. Special attention is given to the Epic and the Drama.

Prescribed for second year preparatory law students. Elective for all students having credit for English 1.

[3 hours throughout the year; 6 units. Associate Professor ST. CLAIR.]

#### SENIOR COLLEGE COURSES

*English 12. Development of the English Drama.*—An outlined course in the history of the English Drama with readings and discussions of the work of the chief playwrights exclusive of Shakspeare.

Elective for students who have credit for nine units in English, including English 4.

[3 hours, first semester; 3 units. Associate Professor HILLES.]

*English 13. Shakspeare.*—A study of Shakspeare's development as playwright and poet; reading of a number of the more important plays; reports on assigned reading; memorization.

Elective for students who have credit for nine units in English, including English 4.

[3 hours second semester; 3 units.]

Professor SNOW.

Associate Professor HILLES.

*English 8. Lyric Poetry.*—An introduction to the various aspects of the inner life of the English people as reflected in the lyrical poetry; tracing of the development of the lyric idea through the various periods, with extensive reference to the work of the leading lyrists; reports and discussions.

Elective for students who have credit for nine units in English. (Not offered 1918-19.)

[3 hours throughout the year; 6 units. Professor SNOW.]

*English 14. The English Novel.*—The history of the English Novel from 1700 to 1900; reading and discussion of the greater English novelists, including Defoe, Richardson, Fielding and Smollett in the eighteenth century; Scott, Jane Austen, Dickens, Thackeray, Charlotte Brontë, George Eliot, Meredith, Hardy, and Stevenson in the nineteenth century.

Elective for students who have credit for nine units in English, including English 4.

[3 hours, second semester; 3 units. Assistant Professor WEIDMANN.]

*English 9. The Prose Essay.*—Development of the Essay from the Elizabethan period to the close of the nineteenth century; reading of masterpieces from Bacon to Pater; discussions and reports.

Elective for students who have credit for nine units in English, including English 4.

[3 hours, first semester; 3 units. Mr. VITERBO.]

*English 15. English Poetry of the Nineteenth Century.*—Special attention given to the reaction from classicism and the influence of the French Revolution; liberalism and individualism; the poetry of the period culminating in the work of Wordsworth, Shelley, Keats, Tennyson, and Browning.

Elective for students who have credit for nine units in English. (This course will alternate with English 7. Not given, 1918–19.)

[2 hours throughout the year; 4 units. Associate Professor ST. CLAIR.]

*English 7. American Literature.*—A general survey of the development of American Literature from its beginning to the close of the nineteenth century. A rapid glance at the literature of the seventeenth and eighteenth centuries; reading and study of the chief writers with special attention to Irving, Cooper, Bryant, Poe, Longfellow, Emerson, Hawthorne, Whittier, Lowell, Holmes, and Whitman. Emphasis is placed on the relation between American literature and American life, and their association with English life and literature.

Elective for students who have credit for nine units in English. (This course will alternate with English 15.)

[2 hours throughout the year; 4 units. Associate Professor ST. CLAIR.]

*English 21. Secondary School English.*—A study of the aims, methods and educational values of the secondary school course in English literature and composition, with reading and analysis of representative selections from the list of American college requirements; and from the material prescribed for the secondary course in the Philippine high schools reports and discussions, criticism of student themes and practical drill.

Elective for students who have credit for ten units in English, including English 1, 2, and 4.

Students intending to prepare themselves to teach English in the high schools should elect course numbered 2, 4, 7, 11, 12, 15, as well as the one just mentioned.

[3 hours throughout the year; 6 units.  
Professor SNOW.  
Mr. VITERBO.

*Public Speaking I. Elocution.*—A study of the elements of elocution. Lectures, recitations, and practice.

Textbook: Fulton and Trueblood, *Essentials of Public Speaking*.

[1 unit. Assistant Professor YAMSON.

*Public Speaking II. Debating.*—A study of the general principles of argumentation and debate; extemporaneous debates on live economics and social problems in the Philippines. Public Speaking I is a prerequisite to this course.

Textbook: Laycock and Scales, *Argumentation and Debate*.

[1 unit. Assistant Professor YAMSON.

*Public Speaking III. Oratory.*—A study of the rhetoric of oratory, and the lives of great orators, and analysis of the world's greatest orations. This course is open only to those who have had Public Speaking I and II, or their equivalent.

Textbooks: Shurter, *Rhetoric of Oratory*; Shurter, *Masterpieces of Modern Oratory*.

[2 units. Assistant Professor YAMSON.

*Public Speaking IV. Advanced Public Speaking.*—This course is specially designed to give the students practice in extemporaneous speaking. It includes a detailed study of the six great triumphs of American eloquence. Each student will prepare a forty-five minute speech. Only those who have completed Public Speaking I, II, and III may take this course.

[2 units. Assistant Professor YAMSON.

## ETHNOLOGY

See under "Anthropology."

## FRENCH

Mrs. FISCHER.

*French 1. Elementary French.*—Elementary grammar and composition; translation and sight reading of simple French prose.

Textbook: French Grammar, Fraser and Squair.

[3 hours throughout the year; 6 units.

*French 2. Intermediate French* (prerequisite, French 1).—Advanced grammar and composition; translation and sight reading of French prose; conversation.

[3 hours throughout the year; 6 units.

*French 3. Advanced French*.—Review of grammar. General view of French literature. Translation and sight reading of works of the best French writers; conversation. For not fewer than 5 students.

[3 hours throughout the year; 6 units.

## GEOLOGY AND GEOGRAPHY

Professor ROWLEY, Acting Chief, and Miss VALDEZ.

*Physiography*.—College physiography intended primarily for those who are taking the Teacher's Course.

Textbook: Salisbury, *Physiography*.

[3 hours a week through the year; 6 units. Professor ROWLEY.

*Geology 1. General Geology*.—A general course, involving a study of geological processes with special emphasis on those which have been important in the geological history of the Philippines. Under this head are taken up the atmosphere as a geological agent, the work of running water, the work of ground water, the work of the ocean, structural geology, diastrophism, vulcanism, and the geological functions of plants and animals. A brief treatment is given the work of snow and ice, and the classification of rocks; and students are given some practice in interpreting topographic maps.

Textbook: Chamberlin and Salisbury, *Geology*.

[3 hours a week through the year; 6 units. Professor ROWLEY.

*Geology 2. Engineering Geology* (prerequisite, Mineralogy).—A short course especially adapted to meet the needs of students of engineering. Required of all engineering students.

Textbook: Rice and Watson, *Engineering Geology*.

[3 hours, second semester; 3 units. Professor ROWLEY.

*Geology 3. Mineralogy* (prerequisite Chemistry 1 and 3).—A detailed study of the chemical and physical properties of common rock-making minerals and some of the rarer minerals of economic importance. Required of all engineering students.

Textbook: Brush and Penfield, *Manual of Determinative Mineralogy and Blowpipe Analysis*.

[6 hours, first semester; 3 units. Professor ROWLEY.

*Geology 4. Historical Geology* (prerequisite Geology 1).—Textbook: Chamberlin and Salisbury, *Geology*, vols. 2 and 3.

[3 hours a week through the year; 6 units. Professor ROWLEY.

*Geology 5. Economic Geology* (prerequisite Geology 1 and 3.)  
Textbook: Ries, Economic Geology.

[3 hours, second semester; 3 units. Professor ROWLEY.]

*Geography 1. Commercial Geography.*—A study of the geography of the leading industries and of the physical and economic principles underlying the geography of commerce.

[3 hours, first semester; 3 units. Miss VALDEZ.]

*Geography 2. Historical Geography.* (History 9 of 1915-16 Catalogue.)

[3 hours throughout the year; 6 units. Miss VALDEZ.]

*Geography 3.* This course is especially designed for those intending to teach history in the secondary schools.

[2 hours, second semester; 2 units. Miss VALDEZ.]

*Geography 4. Teachers' Course in Geography.*—Lectures and discussions on (a) the teaching of physical and commercial geography in the secondary schools, and (b) the principles governing the supervision of the teaching of geography in the elementary grades.

[3 hours throughout the year; 6 units. Miss VALDEZ.]

#### GERMAN

Assistant Professor SCHEERER and Mr. NATIVIDAD.

*German 1. Elementary German.*—The object of the course is to enable students to use the German language (a) in answering questions concerning the contents of and the elements of grammar in an easy piece of reading; (b) in writing a simple letter, a description of an object in view, or similar easy composition.

[3 hours throughout the year; 6 units.]

*German 2. Intermediate German.*—A preparatory course for the reading of literary and scientific authors. Class and outside reading of selected text. German reviews and periodicals introduced. Grammar and composition continued.

[3 hours throughout the year; 6 units.]

*German 3. Advanced German.*—A summary view of the history of German literature will be given. One of Schiller's dramas will be read in class. Outside reading will be assigned to students in connection with their special lines of study, on which oral and written reports will be made. Difficult points in German grammar reviewed.

[3 hours throughout the year; 6 units.]

## HISTORY

Professor CRAIG, Chief of the Department; Professorial Lecturer SALEEBY; Assistant Professor FERNANDEZ; Dr. UYCHUTIN, Miss ALZONA and Mr. ZAFRA.

*History 1. Revolutionary Europe, 1789–1815.*—The social and political reforms.

Text: Stephen's *Revolutionary Europe*.

[3 hours, second semester; 3 units. Miss ALZONA.]

*History 2. Democratic Movement in the Nineteenth Century, 1815–1878.*—The Congress of Vienna, the conservative spirit, nationalism and democracy, and the unity of Italy and Germany.

Prescribed in the Preparatory Law, Preparatory Engineering, and Preparatory Commerce, first year; in the first year of the three-year course in education; and in the second year of the Preparatory Medical Course, the course in Biology, in Chemistry, and in Library Science.

Text: Hazen's *Europe Since 1815*.

[3 hours, first semester; 3 units. Miss ALZONA.]

*History 3. Contemporary Europe.*—The Congress of Berlin, the Balkan States, the expansion of Europe, the partition of Africa, Asia, and Oceanica, and the European War.

Prescribed in the second year of the Library Science Course and the course in Biology.

Prerequisite, History 2.

[3 hours, second semester; 3 units. Miss ALZONA.]

*History 4. Philippine History.*—From the earliest time to the British Occupation. A brief survey of the prehistoric times, the discovery and conquest, the social and political conditions at the time of the conquest, the changes introduced by the Spaniards, the Filipino rebellions of the seventeenth century, the Spanish colonial policy, the conflict between the Church and the State.

Prescribed in the second year of the Library Science Course.

No text is used, but extensive reading in Blair and Robertson is required.

[3 hours, first semester; 3 units. Assistant Professor FERNANDEZ.]

*History 5. Philippine History.*—From the British Occupation to the American Occupation. The representation in the Spanish Cortes, the commercial growth, the reform movement, the propaganda, the Revolution.

Prescribed in the first year of the Preparatory Commerce Course and the three-year course in education; and in the second year of the Preparatory Law, Preparatory Medicine, and the Library Science Course.

No text is used, but extensive reading in Blair and Robertson is required.

[3 hours, second semester; 3 units. Assistant Professor FERNANDEZ.

*History 6. Oriental History.*—Brief survey of the modern history of India, China, Japan, Korea, etc., and their European associations.

Prescribed in the first year of the Preparatory Engineering; and in the second year of the Course in Chemistry, Library Science Course (2) and the combined course leading to the degrees of LL. B. and B. S. in Government. Given in both semesters.

Text: Hannah's Eastern Asia.

[3 hours, first semester; 3 units. Professor CRAIG.

*History 7-A. Ancient Civilization.*—Brief survey of the Greek and Roman civilizations. Designed primarily for students who are preparing to teach history in the high school.

Prescribed in the three-year course in education for students majoring in history.

Text: Bury's Students' History of Greece (Kimball edit.); Pelham's Outline of Roman History (4th edit. revised).

[3 hours, first semester; 3 units. Mr. ZAFRA.

*History 7-B. Method of Teaching History.*—Brief discussion of the methods of teaching history prevailing in various countries, especially France, Germany, England, United States, Japan, and the Philippines and of the classroom devices employed. Designed primarily for those who are preparing to teach history.

Prescribed in the three-year course in education for students majoring in history.

Text: Johnson's Teaching of History.

[3 hours, second semester; 3 units. Assistant Professor FERNANDEZ.

*History 8. Contemporary Oriental Problems.*—Lectures, readings, and recitations.

Prescribed in the second year of the Library Science Course.<sup>1</sup>

[3 hours, second semester; 3 units. Professor CRAIG.

*History 9. Practicum in Philippine History.*—The Philippine Revolution, the Malolos Government, the end of the "Republic." Designed primarily for advanced students who have reading knowledge of Spanish.

Prerequisites, History 4 and History 5.

[3 hours, first semester; 3 units. Assistant Professor FERNANDEZ.

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<sup>1</sup> History 6 and History 8 must be taken together, unless students choose to take History 4 and History 5 instead.

*History 10. Seminar in Philippine History.*—Intensive study of Philippine conditions and events from primary sources. Designed primarily for advanced students who have reading knowledge of Spanish.

Prerequisites, History 4 and History 5.

[3 hours, throughout the year; 6 units. Assistant Professor FERNANDEZ.

*History 15. Ancient Philippines.*—The story of early Philippines as told in the histories of other Oriental lands. Given in both semesters.

[3 hours, first semester; 3 units. Professor CRAIG.

*History 16. Moro History.*—Brief survey of the history of the Mohammedan Filipinos.

Text: Saleeby's Origin of the Malayan Filipinos.

[1 hour, second semester; 1 unit. Dr. SALEEBY.

*History 21. Mediaeval Civilization.*—A survey of civilization during the Middle Ages. The invasions, the feudal system, the Empire and the Church, the Crusades, the Renaissance, the Reformation.

Text: Adam's Civilization during the Middle Ages.

[3 hours, second semester; 3 units. Mr. ZAFRA.

*History 25. United States History, 1492-1829.*—From the discovery to the election of Jackson. The colonies, the Revolution, the Constitution, the growth of nationality.

Texts: Thwaites' The Colonies; and Hart's Formation of the Union. Extensive reading is also required in such authorities as Johnston, Fisk, Lecky, Burgess and Rhodes.

[3 hours, first semester; 3 units. Mr. ZAFRA.

*History 26. United States History, 1829-1909.*—From Jackson's administration to the present. The slavery controversy, the Civil War, the reconstruction, the growth and expansion.

Text: Wilson's Division and Reunion. Extensive reading is also required in Johnston, Rhodes and Beard.

[3 hours, second semester; 3 units. Mr. ZAFRA.

*History 30. Ancient Civilization of China.*—A discussion of ancient Chinese institutions, religious, social, and political. The attempt is to give the students the basic elements of Chinese civilization.

[3 hours, first semester; 3 units. Dr. UYCHUTIN.

*History 31. Contemporary China.*—The Boxer Rebellion, the agitation for the Constitution, the fall of the Manchus, the Republic, the Civil War, China's role in the European War and contemporary Chinese problems.

[3 hours, second semester; 3 units. Dr. UYCHUTIN.



*History 32. Contemporary Japan.*—The fall of the Shogunate, the rise of constitutionalism, the Chino-Japanese War, the acquisition of Formosa, the Anglo-Japanese Alliance, the Russo-Japanese War, the annexation of Korea, the Manchurian question, Japan in the European War and contemporary Japanese problems.

[3 hours, second semester; 3 units. Dr. UYCHUTIN.]

*History 33. Modern History of India.*—A brief survey of British rule in India starting from the battle of Plassey to the beginning of the Home Rule movement.

[3 hours, first semester; 3 units. Dr. UYCHUTIN.]

*History 34. The Minor Oriental Countries.*—A brief survey of the histories of the minor countries in the continent laying emphasis in Siam, Persia, Nepal, Afghanistan, Indo-China, and Malay Peninsula.

[3 hours, second semester; 3 units. Dr. UYCHUTIN.]

*History Club.*—An organization made up of students of high standing devoted to research work in history. By special arrangement with the adviser, the members may earn one credit a semester in recognition of substantial work done.

Mr. ZAFRA.

#### LATIN

Mr. MARAVILLAS.

*Latin 1. Elementary Grammar and Composition.*—Caesar's Gallic wars; (equivalent to two years of high-school work).

[3 hours throughout the year; 6 units.]

*Latin 2. Intermediate Latin.*—An intensive study of the following orations of Cicero: In Catilinam, Pro Archia, Pro Lege Manilia: Latin prose composition based on the selected orations.

[3 hours throughout the year; 6 units.]

#### LAW

The following courses in Public Law given in the College of Law are also open to students of the Senior College on obtaining special permission: Public Corporations, 2 hours, second semester, 2 units, Dean Malcolm; Administrative Law, 2 hours, first semester, 2 units, Dean Malcolm; Constitutional Law, 3 hours, second semester, 3 units, Dean Malcolm; and Public International Law, 2 hours, first semester, 2 units, Justice Carson.

(See also under "Political Science.")

#### LIBRARY SCIENCE

Miss MARY POLK, Acting Chief of the Department.

*Library Science 1.*—Elementary reference work, with special emphasis on the use of reference books in the University and

school libraries; practice in the use of library catalogues and other special reference tools, as dictionaries, encyclopedias, general and special, year books, subject bibliography, national bibliography, etc.; care of books, emphasizing enemies of books in the Tropics; make-up of a book and arrangement of its parts, title page, copyright, dedication, introduction, contents, body of book, indexes, etc.; alphabetering and filing; reporting on assigned reading; note taking; typewriting and library handwriting.

Textbooks: Dana, Library primer; Fay and Eaton, Instruction in the use of books and libraries; Ward, The practical use of books and libraries; Library of Congress, Rules for alphabetering and filing; New York Library School, Selected national bibliographies.

[3 hours, first semester; 3 units. Miss POLK; ———, ———.

*Library Science 2.*—Elementary classification and book numbering; shelf-listing; elementary book selection; reference work continued; public documents; periodicals and serials; reporting on assigned reading.

Textbooks: Kroeger and Mudge, Guide to the use of reference books; Library of Congress, Classification schemes, G, PN-PZ, and S.; P. I. Bureau of Education, Bulletin 44 (revised edition); Cutter-Sanborn 3 figure alphabetic order table; Wyer, U. S. Government documents; Readers' guide to periodical literature.

[3 hours, second semester; 3 units. Miss POLK; ———, ———.

*Library Science 3.*—Elementary cataloging and subject heading; accessioning; labelling and pocketing books; binding and records; mending books; use and ordering of Library of Congress printed cards; reporting on assigned reading.

Textbooks: American Library Association. Catalog rules; Fellows, Cataloging rules; Hitcher, Cataloging for small libraries.

[3 hours, first semester; 3 units. Miss POLK; ———, ———.

*Library Science 4.*—Evaluation and selection of books; book lists; trade bibliography; ordering books; library housing; furniture and other equipment, and library supplies; library legislation; publicity work; preparing copy for the printer and proof reading; library accounting and the making of a budget; reporting on assigned reading.

Textbooks: American Library Association, Manual of library economy (selected chapters); book lists from library commission, etc., especially emphasizing those contained in P. I. Bureau of Education Bulletin 44, revised; U. S. Catalog; Book Review

Digest; British Museum Catalog; Library of Congress reference catalog, etc. American Library Association, A normal library budget.

[3 hours, second semester; 3 units. Miss POLK; ———, ———.

*Library Science 5.*—Practice (under supervision and correction) in actual work with books in the libraries of the University, or in other available collection of books; children's literature; picture collections; reporting on assigned reading.

Textbooks: American Library Association, Manual of library economy (selected chapters); Dana, Modern American library economy (selected chapters); Olcott, The children's reading; American Institute of Child Life, Young folks' directory.

[3 hours, each semester; 6 units. Miss POLK; ———, ———.

*Library Science 6.*—Library history; history of printing and illustrating; advanced classification and cataloging; loan systems; inventory; practice work under supervision and correction; reporting on assigned reading.

Textbooks: Dana, Modern American library economy (selected part).

[3 hours, first semester; 3 units. Miss POLK; ———, ———.

*Library Science 7.*—Library administration; branch libraries, traveling libraries, children's rooms, work with the blind; co-operation between school libraries and other libraries, with special reference to conditions in the Philippine Islands; reporting on assigned reading; field practice work; thesis or bibliography.

Textbooks: American Library Association, Essentials in library administration by L. E. Stearns; Wisconsin, Lessons in the use of a school library.

[3 hours, second semester; 3 units. Miss POLK; ———, ———.

#### MATHEMATICS

Mr. ROA, Miss MARIANO; Mr. REICH, Assistant; Mr. BALTAZAR and Mr. FRANCIA, Professorial Lecturers.

*Mathematics 0. Solid Geometry.*—Supplementary studies in plane geometry. Solid and spherical geometry. Practical problems. An elective course open to any student in the College of Liberal Arts. Textbook; Wentworth, Solid Geometry.

[3 hours, either semester; 3 units.

*Mathematics 1. College Algebra.*—Review in involution and evolutions; surds; theory of exponents and quadratic equations; inequalities; pure, imaginary, and complex numbers; indeterminate linear equations; ratio and proportion; variation; progressions; undetermined coefficients; the binomial theorem for any

exponent; logarithms. This course is required of all college students except those taking the course in preparatory engineering. Textbook; Wells, *Advanced Course in Algebra*.

[3 hours, either semester; 3 units.

*Mathematics 2. Advanced College Algebra.*—Permutations and combinations; probability; continued fractions; summation of series; convergency and divergency of series; theory of numbers; determinants; theory of equations; solution of higher equations. This course is required of commerce students and is elective to other qualified students; pre-requisite, *Mathematics 1*.

[3 hours, either semester; 3 units.

*Mathematics 3. Algebra and Plane Trigonometry.*—Involution and evolution; inequalities; theory of exponents, imaginary and complex numbers; quadratic equations; ratio and proportion; variation; progression; logarithms. An elementary course in plane trigonometry, emphasis being placed on the solution of triangles. A required course for first year students in dentistry and veterinary science. Textbook: Milne, *High School Algebra*; Wentworth, *Plane Trigonometry*.

[3 hours, first semester; 3 units.

*Mathematics 4. Plane Trigonometry.*—Development of general formulae. Practical problems; computation methods. A course required of students in preparatory law and in library science; elective for those in commerce or in preparatory medicine.

[3 hours, either semester; 3 units.

*Mathematics 5. Spherical Trigonometry.*—Development of general formulae. Practical problems. An elective course open to students in the College of Liberal Arts who have passed in *Mathematics 0, 1 and 4*. Textbook; Wentworth, *Plane and Spherical Trigonometry*.

[2 hours, either semester; 2 units.

*Mathematics 6.*—A continuous course running throughout the year and combining the work of *Mathematics 1, 2 and 4* in a manner adapted the special needs of engineering students. Required of engineering students in their first year and open to others who may be qualified. Engineering students may not offer work done in *Mathematics 1, 2 or 4* as a substitute for similar work in *Mathematics 6* unless such work has been done prior to their enrollment as engineering students or unless it has been taken by special permission of the chief of the department.

[4 hours throughout the year; 8 units.

*Mathematics 10. Analytic Geometry.*—Plane analytics; conic sections; graphs; introduction to solid analytics. Textbook; Ashton, *Analytic Geometry*.

[3 hours, either semester; 3 units.

*Mathematics 14. Differential Calculus.*—A general elementary course dealing with the fundamental principles, their development and simpler applications to algebra, geometry and physics. Textbook; Granville and Smith, *Differential and Integral Calculus*.

[3 hours, first semester; 3 units.

*Mathematics 15. Integral Calculus.*—A continuation of Mathematics 14 to cover the integral calculus. Special consideration will be given to the application of the calculus to problems in physics. Pre-requisite; Mathematics 14 or its equivalent. Textbook; Granville and Smith, *Differential and Integral Calculus*.

[3 hours, second semester; 3 units.

*Mathematics 16.*—A continuous course running throughout the year and combining the work of Mathematics 10, 14 and 15 in a manner adapted to the special needs of engineering students. Required of engineering students in their second year and open to others who may be qualified. Engineering students may not offer work in Mathematics 10, 14 or 15 in lieu of work in Mathematics 16 unless such work has been done elsewhere or under special authorization by the chief of the department.

[6 hours throughout the year; 12 units.

*Mathematics 18. Mechanics.*—Primarily for students in the College of Engineering. Required of engineering students and open to Senior College students who have completed Mathematics 6 and 16 or their equivalents.

[6 hours, first semester; 6 units.

*Mathematics 20. Differential Equations.*—A first course dealing mainly with the more usual forms of the ordinary differential equation and with an introduction to partial differential equations. Open to students who have had a year of calculus. Textbook; Cohen, *Differential Equations*.

[5 hours, second semester; 5 units.

*Mathematics 23. Determinants.*—Open to qualified students in the Senior College.

[5 hours, either semester; 5 units.

*Mathematics 24. Infinite Series.*—Open to qualified Senior College students.

[5 hours, either semester; 5 units.

*Mathematics 40. Statistics.*—History and development of statistical science; tabulation and averages; graphic methods; accuracy; law of error; theory of correlation; applications to local and foreign phenomena. Required of students of course in commerce. Textbook; King, Elements of Statistical Method.

[2 hours, second semester; 2 units.

*Mathematics 50. Teacher's Course.*—A training course for actual or prospective teachers of secondary mathematics. Review of basic principles; solution of difficult problems; study of methods, discussion of texts, and practice teaching. Open to Senior College students and to those taking the course in education.

[5 hours throughout the year; 10 units.

#### VOCATIONAL COURSES

*Mathematics 101. Accounting for Engineers.*—A vocational course primarily for civil engineers. It comprises methods of accounting and cost keeping for engineering work.

[2 hours, first semester; 2 units.

*Mathematics 102. Arithmetic of Pharmacy.*—A vocational course required of first year students of the School of Pharmacy. Not open to others.

[3 hours, first semester; 3 units.

*Mathematics 103. Accounting and Business Methods.*—Primarily for students in the School of Pharmacy. Includes business calculations, accounting, invoices and banking. Required of students in the School of Pharmacy.

[3 hours, first semester; 3 units.

*Mathematics 104. Commercial Operations.*—Drill in commercial computations, business operations, tabular work, algebraic equations, theory of probability, elements of calculus. Required of students in the School of Commerce. Textbooks; Moore and Miner, Business Arithmetic; Wells, Advanced Algebra; Granville and Smith, Calculus.

[3 hours, second semester; 3 units.

#### MECHANICAL DRAWING

Assistant Professor DE LA CANTERA.

*Mechanical drawing 1.*—Lettering: Characteristics and proportions of standard letters; design of lettering; methods of spacing; design of titles; principles and definitions of mechanical drawing; exercises in the use of instruments; reproduction of drawings; cross sectioning; selected geometrical problems; trac-

ing. Required of students in the first year in the College of Engineering, and in the second year of the Preparatory Engineering course in the College of Liberal Arts.

Textbook: Reinhardt, Free-Hand Lettering.

[9 hours, first semester; 3 units.

*Mechanical Drawing 2. Descriptive Geometry.*—Representation of lines, planes, and surfaces, and of their relations; tangencies, intersections, and developments; wrapped surfaces; solution of problems in orthographic, central, and oblique projections, illustrated by examples in shades, shadows, perspective, and stereotomy. Recitations, lectures, drawing. Required of students in the first year in the College of Engineering and in the second year of the preparatory engineering course in the College of Liberal Arts.

[16 hours, second semester; 6 units.

#### MINERALOGY

See "Geology."

#### PHILOSOPHY

Associate Professor TOWNSEND and Mr. CLAUDIO.

*Philosophy 1. Elementary Psychology.*—Lectures, recitations, and demonstrations.

[3 hours, second semester; 3 units. Mr. CLAUDIO.

*Philosophy 2. The Principles of Logic, Deductive and Inductive.*—Recitations and written exercises.

[3 hours, first or second semester; 3 units. Associate Professor TOWNSEND.

*Philosophy 3. The History of Philosophy.*—A study of leading philosophical and ethical theories from Thales to Kant with some references to modern writers. Prescribed in the second year of the preparatory law course and of the preparatory medical course in the College of Liberal Arts.

[3 hours, second semester; 3 units. Associate Professor TOWNSEND.

*Philosophy 4. Advanced Psychology.*—Lectures, recitations, and demonstrations.

[3 hours, first or second semester; 6 units. Associate Professor TOWNSEND.

#### PHILIPPINE LANGUAGES

See "Anthropology."

#### PHYSICAL TRAINING

Associate Professor CASSIDY, Physical Director.

All students in the College of Law and Liberal Arts, unless excused for some good reason, are obliged to take two hours physical exercise a week throughout the year. The men are

graded into groups and play such games as will do the most good to the greatest number. The work includes military science, group games, and regular major sports. Young men who are members of the varsity teams may be excused from military duty during the period of active training. The young women of the University are obliged to play tennis or complete a certain amount of gymnasium work prescribed by the Physical Director.

[2 hours, throughout 2 years required for graduation.

Two physical examinations are given to each male student of the University each college year. The time and place of these examinations will be designated by the Deans of the respective colleges.

*Physical Education, Teachers' Course.*—This course is required of all first year students in Education. It consists of lectures, text-book work and assigned outside readings covering briefly personal and domestic hygiene, food, physical exercise and its results, body posture, and as many games as time will permit.

Text books: Exercise in Education and Medicine, Makengie; Personal Hygiene, Pyle, and Official Rules of Games.

[3 hours, two semesters, 6 units. Associate Professor CASSIDY.

## PHYSICS

Professor WRIGHT, Chief of Department; Assistant Professor SAMUELS and FISHER; Messrs. CORCUERA and MACABULOS.

The instruction in physics is directed toward the following ends: (1) The training of teachers of physics for the secondary schools; (2) the training of engineering, medical, pharmacy, and veterinary students for their later professional work; (3) the training of the general student in scientific methods of work and in the understanding of the place of physical science in the modern world. In all courses the laboratory and the problem methods of instruction are emphasized.

*Physics 1. Elementary Physics.*—A first course in the elements of physics designed primarily for students who do not present Entrance Physics, or whose preparation in physics is found upon trial, to be deficient.

[7 hours, first semester;  $\frac{1}{2}$  entrance credit.

[7 hours, second semester;  $\frac{1}{2}$  entrance credit.

*Physics 2. General Physics* (prerequisite, Entrance, Physics and Trigonometry).—A course of lectures, demonstrations, and recitations covering the subjects of mechanics, molecular phy-



sics, heat, electricity, sound, and light, especial attention being given to recent discoveries and developments in physics.

[3 hours, first semester; 3 units. 3 hours, second semester; 3 units.

*Physics 2-E.*—The same as Physics 2, but with additional work in the application of fundamental principles and in the solution of problems. Intended primarily for engineering students and for students specializing in science. Prerequisite, Entrance Physics and Trigonometry.

[3 hours, first semester; 3 units. 3 hours, second semester; 3 units.

*Physics 2-M.*—The same as Physics 2, but modified to suit the needs of the premedical student, and with the addition of three hours of laboratory work per week. Prerequisite, Entrance Physics and Trigonometry.

[6 hours, first semester; 4 units. 6 hours, second semester; 4 units.

*Physics 3. Mechanics, Molecular Physics, and Heat.*—A laboratory course in mechanics, molecular physics, and heat, supplemented by lectures and classroom work. Prerequisite, Physics 2 and Trigonometry.

[8 hours, first semester; 3 units.

*Physics 4. Electricity, Sound, and Light.*—A continuation of Physics 3. Prerequisite, Physics 2 and Trigonometry.

[8 hours, second semester; 3 units.

#### SENIOR COLLEGE COURSES

*Physics 21. Molecular Physics and Heat.*—A course of lectures and advanced laboratory work. Two hours a week will be devoted to lectures on the kinetic theory, capillarity, elementary thermodynamics, conductivity of solutions, and electrolysis. The lectures will be supplemented by laboratory work involving accurate determinations of vapor pressures and densities, coefficients of friction of gases and liquids, molecular electrical conductivities, freezing and boiling points, latent and specific heats, high and low temperatures, radio-active constants, etc.

Prerequisite, Physics 3 and 4, and Calculus.

[8 hours, first semester; 4 units. 8 hours, second semester; 4 units.

*Physics 22. Light.*—A course of lectures and advanced laboratory work covering theoretically the more important phases of geometrical and physical optics, supplemented by laboratory work consisting of accurate measurements in diffraction, dispersion, interference, and polarization.

Prerequisite, Physics 3 and 4, and Calculus.

[8 hours, first semester; 4 units. 8 hours, second semester; 4 units.

*Physics 23. Electricity and Magnetism.*—A course of lectures and advanced laboratory work in electricity and magnetism.

(Not offered in 1918–19.)

Prerequisite, Physics 3 and 4 and Differential Equations.

[8 hours, first semester; 4 units. 8 hours, second semester; 4 units.]

*Physics 24. Electrical and magnetic measurements.*—Must be preceded by Electrical Engineering 1.

Prerequisite Physics 3 and 4 and Differential Equations.

Not given in 1918–19.

[9 hours, second semester; 3 units.]

#### PHYSIOGRAPHY

See “Geology.”

#### POLITICAL SCIENCE

Assistant Professor KALAW, Acting Chief of Department; ANTONIO DE LAS ALAS, Lecturer; JOSE S. REYES, Assistant.

*Political Science 1. Principles of Political Science.*—An introductory course in the general elements of Political Science. Prescribed in the first year of the Preparatory Law Course.

[3 hours, first semester; 3 units. Mr. ———.]

*Political Science 2. Constitutional History.*—A rapid survey of the growth of constitutionalism in Great Britain, the United States, Spain, and the Philippines. Prescribed in the first year of the Preparatory Law Course.

[3 hours, second semester; 3 units. Assistant Professor KALAW.]

*Political Science 3. American Government.*—A study of the governments and politics of the United States. Prescribed in the second year of the Preparatory Law Course.

[3 hours, first semester; 3 units. Assistant Professor KALAW.]

*Political Science 4. Philippine Government.*—Its development and fundamentals together with an analysis of the structure and functions of the present Insular Government. Text-book, lectures, assigned reading, and reports. This course is prescribed in the first year of the Course in Commerce, and it is an elective for students of the Senior College and the School of Education.

[3 hours, first semester; 3 units. Assistant Professor KALAW.]

*Political Science 5. Oriental Governments.*—A study of the governments and political relations of the Orient, particularly of Japan, China and the East Indies. Prescribed in the second year of the Preparatory Law Course.

[3 hours, second semester; 3 units. Assistant Professor KALAW.]

## SENIOR COLLEGE

*Political Science 6. European Governments.*—A study of the fundamental organization of the principal European governments. Prerequisites, Political Science 1 and 2.

[3 hours, first semester ; 3 units. Assistant Professor KALAW.

*Political Science 7. Political Parties.*—The part they play in modern politics, with special reference to the political parties of the United States, England, and the Philippines. Prerequisites, Political Science 1, 3, and 4.

[3 hours, second semester ; 3 units. Assistant Professor KALAW.

*Political Science 8. Municipal Government.*—The various methods by which modern cities are administered are investigated, with special reference to conditions in the Philippines. Prerequisites, Political Science 1, 3, and 4.

[2 hours, first semester ; 2 units.

*Political Science 9. Theory and Practice of Legislation.*—A study of the methods of procedure of legislature bodies, with special reference to the methods of the Philippine Congress. Mechanics bill drafting. Prerequisites, Political Science 1, 3, and 4.

[2 hours, first semester ; 2 units. Assistant Professor KALAW.

*Political Science 10. Teachers' Course in Government.*—Methods of teaching government in intermediate and secondary schools. A rapid review of the text for Civics used in the public schools. Primarily for students of the School of Education. Prerequisites Political Science 1 and 4.

[3 hours, throughout the year ; 6 units. Assistant Professor KALAW.

*Junior House of Representatives.*—Practice in parliamentary law, debating, and legislation.

[throughout the year ; 1 unit.

The following courses in Public Law given in the College of Law are also open to students of the Senior College on obtaining special permission: Administrative Law, 2 hours, second semester, 2 units, Dean Malcolm; Public Corporations, 2 hours, first semester, 2 units, Dean Malcolm; Constitutional Law, 3 hours, second semester, 3 units, Dean Malcolm; and Public International Law, 2 hours, first semester, 2 units, Justice Carson. A special Political Science course leading to the Degree of Bachelor of Science in Government has been approved by the Board of Regents. (See page 80.)

## SOCIOLOGY

Assistant Professor LUIS RIVERA.

*Sociology 1. Principles of Sociology.*—This course is prescribed in the second year of the Preparatory Law Course.

[3 hours, second semester; 3 units. Mr. RIVERA.

*Sociology 2. Social Ethics.*—The practical application of ethical principles to social problems. Lectures, assigned readings and special reports. Prerequisite, Economics 1. This course is open to students in the College of Law and the College of Medicine; it is also open to others who have taken or are taking Sociology 1, or Anthropology 1.

[3 hours, second semester; 3 units. Mr. RIVERA.

*Sociology 3. Sex and Society.*—A study of the influence of woman on social progress. Prerequisite, Economics 1, Sociology 1.

[3 hours, second semester; 3 units. Mr. RIVERA.

*Sociology 4. Rural Sociology.*—A study of our rural social problems in relation with our urban communities.

[3 hours, first semester; 3 units. Mr. RIVERA.

*Sociology 5. Criminology.*—A systematic survey of the problems of social control. The course is divided in two parts. The first part discusses the nature and causes of crime. The second part deals with the treatment of crime. Prerequisite; Sociology 1, and Sociology 2.

[3 hours, first semester; 3 units. Mr. RIVERA.

*Sociology 6. Social Psychology.*—A study of the mind of crowds, groups, and societies. The study is confined entirely to those uniformities that come into existence among men from social causes, as a result of mental contacts or mental interactions. Prerequisite; Sociology 1 and Psychology 1.

[3 hours, first semester; 3 units. Mr. RIVERA.

## PUBLIC SPEAKING

See "English."

## SPANISH

Assistant Professor LUZ, Acting Chief, Mr. HERVAS and Mr. MARAVILLAS.

Some proficiency in the use of the Spanish language is required for admission to Spanish 1. This is primarily a course in Spanish grammar and is not intended for beginners.

*Spanish 1.*—Elementary Spanish.

*Grammar.*—Two periods a week for the first semester with simple composition work based on Hills and Ford's Spanish Grammar as textbook; and one period a week during the second

semester, using "La Gramatica Castellana de la Real Academia Española" as text.

*Composition.*—Practical composition writing on some familiar subjects to encourage the students to think and write correctly in Spanish together with letter writing for the purpose of making the students learn the Spanish methods of writing social and business letters. One period a week during the second semester.

*Reading.*—One period a week throughout the year. The following texts will be used: Loiseaux, Elementary Spanish Reading for the first semester, and Valdés, Capitán Ribot for the second semester supplemented with Valera, Pepita Jimenez as home reading. Special care will be taken to make the students learn the proper pronunciation, annunciation, and expression. Spanish idioms will be explained to the students who will be expected to learn them.

*Conversation.*—During the second semester the students will be encouraged to explain in Spanish everything they do in the class room, and in addition, the students will be required to make oral reports in Spanish based on their newspaper and magazine reading of some practical, every day problems.

[3 hours throughout the year; 6 units. Professor LUZ.

*Spanish 2. Intermediate Spanish.*—(Prerequisite, Spanish 1 or two years' work in a preparatory school.) General view of Spanish literature. At the beginning of the year a few exercises in the translation of English into idiomatic Spanish will be required, in order to eliminate from the class those who have not yet acquired a satisfactory command of the language. Thereafter a study will be made of the literature rather than of the language.

The work will comprise translation, interpretation, questions in grammar based on the text, and historical matter contained in the texts and introductions. Lectures will be given on the development of Spanish literature, introduced by a brief survey of Spanish history.

The following text will be read in class: Valera, Doña Luz; Rizal, Noli Me Tangere; Rizal, El Filibusterismo; Moratín, El Sí de las Niñas; Calderón, La Vida es Sueño; and Cervantes's Novelas Ejemplares.

For outside reading: Gil y Zárate, Guzmán el Bueno; Galdós, Doña Perfecta; Alarcón, El Capitán Veneno; Valera, Pepita Jimenez; Echagaray, El Gran Galeoto; and a play by Lope de Vega.

[3 hours throughout the year; 6 units. Mr. HERVÁS.

*Spanish 3.*—(Prerequisite, Spanish 2.) The Golden Age in Spanish literature. Rapid reading in Spanish of some of the classics of this period, with interpretation of difficult passages. Such texts as the following will be used: Ford's Spanish Anthology, La Celestina, La Propaladia, La Vida de Lazarillo de Tormes, Ford's Selections from Don Quijote, and several plays by Lope de Vega.

Individual assignments will be given for detailed reports on various special topics; Ticknor's History of Spanish Literature and Rennert's Life of Lope de Vega will be used as reference books. In addition, the following texts will be assigned for home reading: G. de Castro, Las Cucedades del Cid; Tirso de Molina, Don Gil de las Galzas Verdes; Moreto, El Desdén con el Desdén; Calderón, El Mágico Prodigioso.

[3 hours throughout the year; 6 units.

## ZOOLOGY

Professor COWLES, Chief of Department; and Assistant Professors DAY, WHARTON, and LIGHT.

*Biology 1. Elementary Biology.*—This course is designed to be introductory to medicine and veterinary science as well as to give a general introduction to zoölogy. The first third of the year is devoted to the study of the gross anatomy, histology, physiology, habits, and embryology of the frog; the second third, to the study of those lower organisms which are of especial interest to students of medicine and veterinary science, stress being laid on experimental methods; the last third, to a careful study of the anatomy of the shark and the cat.

Textbook: Parker and Haswell, Manual of Zoölogy.

[9 hours throughout the year; 6 units.

Professor COWLES.

Assistant Professor DAY.

Assistant Professor LIGHT.

*Zoölogy 1. The Frog.*—A study of the gross anatomy, histology, physiology, habits, and life history of the frog. Open to all University students.

[9 hours, first semester; 3 units.

Professor COWLES.

Assistant Professor DAY.

*Zoölogy 2. Zoölogy for Pharmacy Students.*—This course is designed more particularly for pharmacy students but it will be found a useful course for others, especially those who expect to teach.

It will be primarily, a course in vertebrate anatomy with dissections of the shark, frog, and cat but also invertebrate

forms which are of especial importance in pharmacy will be studied.

Textbook: *Vertebrate Zoölogy*, Pratt.

[9 hours, first semester; 3 units. Assistant Professor WHARTON.

*Zoölogy 3. Biological Problems in Engineering.*—A course treating of the biological problems involved in water supplies, sewerage, and sanitation.

[9 hours, second semester; 3 units. Assistant Professor WHARTON.

*Zoölogy 4. Teacher's Course in Zoölogy.*—A course in which a study of the animals of the Philippines will be made with especial regard to their distribution, relationships, and adaptations. In order to give the students a knowledge of sources and of the ramifications of the science, the lectures on certain groups of animals will be given by specialists in these groups and in the case of the protozoa, the lectures and laboratory work will be given by Professor Haughwout, Head of the Department of Medical Zoölogy in the College of Medicine and Surgery. Elementary instruction will be given in the preparation of material for microscopic work. A certain amount of field work will be required.

Text: Hegner; *College Zoölogy*.

This course will be given in 1918-19 and every alternate year thereafter.

[6 hours throughout the year; 6 units. Assistant Professor LIGHT.

*Zoölogy 4a. Advanced Invertebrate Zoölogy.*—A laboratory, museum and text book course in systematic and general zoölogy of invertebrates. Prerequisite, Zoölogy 4 or Biology 1.

Text: Parker and Haswell, *Text-Book of Zoölogy*, Vol. I.

[6 hours throughout the year; 6 units. Assistant Professor LIGHT.

*Zoölogy 4b. Advanced Vertebrate Zoölogy.*—A laboratory, museum and text book course in systematic and general zoölogy of vertebrates. Prerequisite, Zoölogy 4 or Biology 1.

Text: Parker and Haswell, *Text-Book of Zoölogy*, Vol. II.

[6 hours throughout the year; 6 units. Assistant Professor LIGHT.

#### SENIOR COLLEGE COURSES

Zoölogy 3 and 4 may be taken in the Senior College by those students who have not been able to take them before graduation from the Junior College.

*Zoölogy 5. Comparative Anatomy and Embryology of Invertebrates.*—A course designed for those who are preparing to teach zoölogy. Prerequisite, Zoölogy 1.

Assistant Professor DAY.

*Zoölogy 6. Comparative Anatomy and Embryology of Vertebrates.*—An advanced course for those preparing to teach zoölogy. Prerequisites: Zoölogy 1.

Assistant Professor DAY.

*Zoölogy 7. Field Work.*—Students who are interested in zoölogy will be given the opportunity of accompanying expeditions during the vacations in order to obtain a practical knowledge of collecting and preserving specimens under field conditions, as well as to make studies and collections of their own. A considerable amount of field work will be required of all those expecting to teach zoölogy.

*Zoölogy 8. Special Medical Zoölogy.*—This course will consist of lectures dealing with nonparasitic animals which are more or less closely related to diseases of man. Special attention will be paid to the identification and recognition of poisonous forms of coelenterata arthropoda, pisces, amphibia and reptilia; to the nature and effects of animal poisons, and to the treatment of wounds and diseases caused by these animals.

[1 hour, first semester; 1 unit. Assistant Professor WHARTON.

*Zoölogy 9. Helminthology.*—A study of the anatomy and life histories of parasitic worms. In the laboratory the students will be taught to identify the species which are found in man and the domestic animals, the practical methods of obtaining and identifying the eggs, and the simpler methods of prophylaxis. Prerequisites: Biology 1 or Zoölogy 2.

[4 hours, second semester; 2 units. Assistant Professor WHARTON.

*Zoölogy 10. Introduction to Protozoölogy.*—Elementary studies of protozoa as a preparation to the study of Protozoölogy. Prerequisite, Zoölogy 1.

[3 hours, second semester; 3 units. Assistant Professor DAY.

*Zoölogy 11. Elementary Cytology and Cellular Embryology.*—A course of lectures, demonstrations, laboratory work and conferences on the nature and structure of protoplasm and the cell and the fundamental processes of development such as cell division, gametogenesis, maturation, fertilization, cleavage, and the formation of the blastula, gastrula, and germ layers. Prerequisite, Biology 1.

To be given in 1919–1920 and alternate years thereafter.

[6 hours first semester; 3 units. Assistant Professor LIGHT.

*Zoölogy 12. Microscopic Technique.*—A lecture and laboratory course consisting of instruction and practice in the preparation and microscopic examination of animal tissues.

To be given in 1919–1920 and alternate years thereafter.

[6 hours, second semester; 3 units. Assistant Professor LIGHT.



*Zoölogy 15. Research.*—Students who have had sufficient preparation will be assigned research work. Hours and credit to be arranged.

#### GENERAL INFORMATION

Professor COWLES.

#### CREDITS

One university hour of credit is one lecture or recitation each week for the period of a complete semester.

In all courses, two and a half to three hours of laboratory work, and, in the technical courses, three hours of drafting or shopwork, are regarded as the equivalent of one recitation or lecture.

#### FEES AND TUITION

A tuition fee of ₱30 a semester is charged during the first two years for the courses leading to the title of Associate in Arts. For three or more years for higher degrees a fee of ₱40 a semester is charged.

A tuition fee of ₱25 a semester is charged in the College of Education.

A tuition fee of ₱5 is charged for the Summer Course with the usual deposits and laboratory fees charged to regular students.

All students who are not residents of the Philippine Islands shall pay a tuition fee of ₱150 a year.

A fee of ₱5 per semester may be charged in all laboratory or technical courses, giving three units of credit for a semester, and ₱10 per semester in those giving more than three units credit for a semester.

There is a fee of ₱5 for delayed registration, and for any change in registration a fee of ₱5 is charged.

On the payment of a fee of ₱10, a student may take a special examination at any time for the purpose of removing a condition.

An athletic fee of ₱1 per semester is charged every student in the College of Liberal Arts.

Each student of the College of Liberal Arts will be required to deposit ₱15 in addition to the regular fees with the secretary on matriculation. This deposit is for the purpose of covering any losses of apparatus, supplies, books, etc., or any damage to university property which may properly become a charge against the student. A student not taking laboratory work is required to deposit ₱10.

#### GRADES OF SCHOLARSHIP

The results of examinations, together with term work when a record of the latter is kept, will be ranked and reported in

five grades, 1, 2, 3, 4, 5. The first grade denotes marked excellence. The second grade indicates that the student's work has been thoroughly satisfactory. The third grade denotes a pass. Courses in which students have obtained a fourth grade will not be credited until a second examination has been passed by the student. The fifth grade indicates failure and the necessity of repeating the entire course. The report in case of absence from an examination, or of failure to perform any of the allotted work in a given course, is *incomplete*. Work so reported must be made up within a year.

The entrance examinations are ranked and reported in five grades, corresponding with the five grades used for university courses. In the case of entrance examinations, neither a fourth grade (condition) nor a fifth (failure) may be removed until the next schedule entrance examination.

Second examinations are permitted only for the purpose of removing deficiencies. Students who have received second grade or third grade in a given course are not allowed such examinations for the purpose of improving their grade.

#### CONDITIONS AND FAILURES

For the removal of conditions, students shall have the privilege of taking the next following regular mid-year or annual examinations in the subjects in which they are conditioned, or the special examinations for the removal of conditions only, held immediately before the beginning of each semester. Examinations may be held at other times only by the special permission of the faculty and on payment of a fee of \$10. *All conditions must be made up within one year.*

Opportunity for the removal of matriculation deficiencies is offered each year at the time of the entrance examinations.

Any undergraduate student who is reported as having failed in a course, or after being conditioned, does not pass a second examination for the removal of the condition, will be required to repeat every such deficient subject with the class that next takes it; unless, on recommendation of the instructor in charge, the faculty shall permit the student to review a subject in which he is thus deficient with the assistance of an acceptable private tutor; in which case he will be excused from attending the recitations, but will be required to take the regular examinations at the end of the year or half year.

No student will be recommended for a degree until all deficiencies incurred at any time during the course have been finally

and satisfactorily removed, and the secretary's report shows a completely clear record and that all indebtedness has been discharged. All examinations of candidates must have been passed prior to the meeting of the university council appointed for recommending candidates for degrees.

#### LEAVE OF ABSENCE AND HONORABLE DISMISSAL

Prolonged leave of absence must be sought by written petition to the proper faculty, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired. An indefinite leave of absence will in no case be granted.

A student must apply for leave to be absent, or for an excuse for having been absent from any college exercises other than an examination, to the officer of instruction in charge of such exercise; unless, for unavoidable cause, the student is obliged to absent himself from all college exercises for one day or for several days, in which case the dean will issue a written excuse for leave. Leave to be absent from an examination must be sought by written petition to the proper faculty.

Leave to be absent or an excuse for absence does not, in any case, absolve the student from doing the work covered by his class during his absence, to the satisfaction of the instructor in charge.

Students who discontinue any of their work without formal leave of absence do so at the risk of having their registration privileges curtailed or entirely withdrawn.

Honorable dismissal, indicating that the student, while in good standing, has voluntarily severed his connection with the University, should be sought by written petition to the proper faculty. Without such petition, no record of honorable dismissal will be made.

#### ATHLETICS

All students will be required to take systematic exercise provided they shall be certified as fit by the medical examiner.

#### MEDICAL EXAMINATION

All students of the college are required to undergo a medical examination at the beginning of each semester. This examination is a prerequisite to registration. No fee will be charged for the examination.

## HOSPITAL FACILITIES AND MEDICAL ATTENDANCE

The Philippine General Hospital grounds adjoin the campus of the University. Students of the University may there receive emergency attendance free, and will be admitted for treatment in cases of illness at the usual reasonable rates.

## LIBRARIES

The Library of the College of Liberal Arts occupies a room on the second floor of University Hall. The collection numbers 1,570 books and pamphlets. All books are catalogued by author and subject and represent some of the best modern writing in the departments of literature, history, economics and education. Philippine history and civics receive ample attention. The room is also used by the students as a reading room and study and is open from 7.45 in the morning until 10 o'clock in the evening. By a system of loans from the Philippine Library the number of books available is greatly increased.

Through the courtesy of the librarian, the privileges of the library of the Military Information Bureau are extended to the faculty of the University of the Philippines. This library contains a good collection of books on military history, on colonization and colonial government, on current problems of the Orient, as well as all the essential secondary material for the study of Philippine history. It is located in Fort Santiago, Manila.

The privileges of the Circulating Library of Manila are also extended to students of the University free of charge. The following regulations must be observed:

1. The student shall present a statement, signed by the secretary, to the effect that he is a regularly enrolled student of the University and in good standing.
2. The student shall agree in writing to obey the regular rules and regulations of the library and to be personally responsible for any loss that the library may sustain through him.
3. The University of the Philippines will require its students to fulfill strictly all the rules and regulations of the library.
4. These privileges will be denied any student whenever any of the rules and regulations are infringed.

The reading room of the library of the Bureau of Science is open to all members of the University of the Philippines. This reading room contains standard dictionaries in English, Spanish, and other languages, sets of encyclopedias, year books, bibliographies, Who's Who's, a set of Blair and Roberston, "The Philippine Islands," etc. Students can usually arrange to take books needed for home study from the library for short periods of time.

## EXPENSES

The expenses connected with the college courses consist of the general deposit, laboratory fees, athletic fees, and the cost of textbooks. The deposit and athletic fees are the same for all. The laboratory fees are not likely to exceed ₱20 a semester. The cost of books is variable, but every student should be prepared to spend from ₱60 to ₱100 a year for books. A student who is taking no laboratory courses may find that ₱80 a year will cover the expenses mentioned. One who is taking a considerable amount of laboratory work and whose books are more expensive may need ₱150.

Room and board in Manila cost from ₱18 to ₱50 a month.

*Summary of enrollment of students in the College of Liberal Arts during the academic year 1917-18.*

Senior College .....	7
Regular B. A., second year.....	64
Regular B. A., first year.....	54
Preparatory Law, second year.....	5
Preparatory Law, first year.....	20
Preparatory Medicine, second year.....	4
Preparatory Medicine, first year.....	106
Preparatory Engineering, second year.....	7
Preparatory Engineering, first year.....	4
Course in Chemistry.....	5
Course in Commerce (regular).....	21
Preparatory Course in Commerce.....	13
Special in Commerce.....	33
Course in Library Science.....	2
Other Special students.....	29
Total .....	374



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THE UNIVERSITY OF THE PHILIPPINES

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COLLEGE OF EDUCATION

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EIGHTH ANNUAL ANNOUNCEMENT AND CATALOGUE





## **Faculty of the College of Education.**

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IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

FRANCISCO BENITEZ, B. S., M. A.,  
Dean and Professor of Education.

WALTER W. MARQUARDT, B. A., Pd. D., Director of Education.  
Professorial Lecturer on Educational Administration.

CAMILO OSIAS, B. S., Assistant Director of Education.  
Professorial Lecturer on School Supervision.

JOHN W. OSBORN, M. A., Chief Academic Division, Bureau of Education.  
Professorial Lecturer on Secondary Education.

HENRY S. TOWNSEND, B. A., M. A.,  
Associate Professor of Philosophy and Psychology.

LUIS RIVERA,  
Assistant Professor of Sociology.

JOSE TEODORO, LL. B.,  
Lecturer on Philosophy.

RAMONA S. TIRONA, A. B., B. S.,  
Instructor in Education.

ENCARNACION ALZONA, A. B., B. S., M. A.,  
Instructor in History.

EDUARDO L. CLAUDIO, A. B., M. A.,  
Assistant in Education.

NICOLAS ZAFRA, A. B., B. S.,  
Assistant in History.

(For instruction in English, botany, economics, geology and geography, anthropology and ethnology, political science, history, zoölogy, spanish, mathematics, and Latin see Faculty, College of Liberal Arts.)

## **UNIVERSITY HIGH SCHOOL.**

### **FACULTY.**

Miss RAMONA S. TIRONA, B. A., B. S. E., Principal.

Miss ANDREA MARIANO, B. A., B. S., Teacher of Mathematics.

Miss CONSUELO BARRERA, B. A., H. T. C., Teacher of English.

Mr. JOSE Ma. SANTIAGO, B. A., H. T. C., Teacher of Physics.

Miss SOLEDAD AGUIRRE, B. A., Teacher of Spanish and English.

Mr. PABLO DEL VILLAR, B. A., Teacher of Biology.

Mr. MARIANO MENCAS B. A., H. T. C., Teacher of History.

Mr. MANUEL ROA, B. A., Teacher of Mathematics.



# COLLEGE OF EDUCATION

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## SCOPE AND AIMS

The purpose of the College of Education is to bring together and correlate all of the forces of the University which contribute in a professional way to the preparation of educational leaders in high schools, normal schools, supervisorships and superintendencies.

The curriculum of the college is based upon the assumption that teachers should have first of all, and fundamental to all other preparation, a broad and liberal education; second, that they should be masters of some special subject or group of subjects which they expect to teach; and third, that this training should be supplemented by professional education which shall give a new meaning to the subjects of instruction, a knowledge of the pupils to be taught, and the problems to be met.

## ADMISSION REQUIREMENTS

For admission requirements see page 25.

## ADVANCE STANDING

Credit may be given for courses in psychology, education, and other subjects satisfactorily completed in recognized normal schools and colleges. Graduates of the Philippine Normal School and provincial normal schools will be given 12 units advanced credit. However, no student shall be granted a certificate or degree who has not done practice teaching in the University High School for at least one semester.

When a student has received surplus entrance credit, there will be deducted from the hours required for graduation the number of hours his surplus entrance credit may warrant, and he will be considered to have been in residence for the period corresponding to the number of hours for which he is given credit on entrance.

A student admitted to the College of Education from another college of the University of the Philippines or from any other institution of collegiate rank shall be regarded as having completed the number of terms and of hours to which his records entitle him. He will receive all the privileges of students who

have completed the same number of terms and hours by residence in the college. In order, however, to obtain the Bachelor of Education or the degree of Bachelor of Science in Education he must have been in residence at least two semesters in the College of Education.

#### SPECIAL STUDENTS

Persons of the requisite age and experience may be admitted as special students without examination, provided they give evidence of ability to do work in the College. Special students are subject to the same regulations in regard to examination and attendance as regular students.

#### DEPOSIT AND FEES

Tuition in the College is ₦25 a semester for students who enter July 1, 1918, and thereafter and ₦5 a subject per semester for special students.

Each student will be required to deposit ₦15 with the secretary of the University upon matriculation, to cover any loss of apparatus, books, supplies, etc., or any damage to University property which may be charged against him.

A fee of ₦5 per semester will be charged in all laboratory courses.

There is a fee of ₦5 for delayed registration, and for any change in registration.

An athletic fee of ₦1 per semester will be charged each student.

#### SUMMER SESSION

The summer session of the College of Education opens on the last week of April and lasts for six weeks. Teachers of the requisite age and experience are admitted as special students.

A tuition fee of ₦5 is charged for the summer course with the usual deposits and laboratory fees charged to regular students.

#### CREDITS

One university hour of credit is one lecture or recitation each week for the period of a complete semester.

In all courses, two and a half to three hours of laboratory work, and, in the technical courses, three hours of drafting or shopwork, are regarded as the equivalent of one recitation or lecture.

#### GRADES OF SCHOLARSHIP

The results of examinations, together with term work when a record of the latter is kept, will be ranked and reported in

five grades, 1, 2, 3, 4, 5. The first grade denotes marked excellence. The second grade indicates that the student's work has been thoroughly satisfactory. The third grade denotes a pass. Courses in which students have obtained a fourth grade will not be credited until a second examination has been passed by the student. The fifth grade indicates failure and the necessity of repeating the entire course. The report in case of absence from an examination, or of failure to perform any of the allotted work in a given course, is *incomplete*. Work so reported must be made up within a year.

The entrance examinations are ranked and reported in five grades, corresponding with the five grades used for university courses. In the case of entrance examinations, neither a fourth grade (condition) nor a fifth (failure) may be removed until the next scheduled entrance examination.

Second examinations are permitted only for the purpose of removing deficiencies. Students who have received second grade or third grade in a given course are not allowed such examinations for the purpose of improving their grade.

#### CONDITIONS AND FAILURES

For the removal of conditions, students shall have the privilege of taking the next following regular mid-year or annual examinations in the subjects in which they are conditioned, or the special examinations for the removal of conditions only, held immediately before the beginning of each semester. Examinations may be held at other times only by the special permission of the faculty and on payment of a fee of ₱10. *All conditions must be made up within one year.*

Opportunity for the removal of matriculation deficiencies is offered each year at the time of the entrance examinations.

Any undergraduate student who is reported as having failed in a course, or after being conditioned, does not pass a second examination for the removal of the condition, will be required to repeat every such deficient subject with the class that next takes it; unless, on recommendation of the instructor in charge, the faculty shall permit the student to review a subject in which he is thus deficient with the assistance of an acceptable private tutor; in which case he will be excused from attending the recitations, but will be required to take the regular examinations at the end of the year or half year.

No student will be recommended for a degree until all deficiencies incurred at any time during the course have been finally and satisfactorily removed, and the secretary's report shows a

completely clear record and that all indebtedness has been discharged. All examinations of candidates must have been passed prior to the meeting of the university council appointed for recommending candidates for degrees.

#### LEAVE OF ABSENCE AND HONORABLE DISMISSAL

Prolonged leave of absence must be sought by written petition to the proper faculty, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired. An indefinite leave of absence will in no case be granted.

A student must apply for leave to be absent, or for an excuse for having been absent from any college exercises other than an examination, to the officer of instruction in charge of such exercise; unless, for unavoidable cause, the student is obliged to absent himself from all college exercises for one day or for several days, in which case the dean will issue a written excuse for leave. Leave to be absent from an examination must be sought by written petition to the proper faculty.

Leave to be absent or an excuse for absence does not, in any case, absolve the student from doing the work covered by his class during his absence, to the satisfaction of the instructor in charge.

Students who discontinue any of their work without formal leave of absence do so at the risk of having their registration privileges curtailed or entirely withdrawn.

Honorable, dismissal, indicating that the student, while in good standing, has voluntarily severed his connection with the University, should be sought by written petition to the proper faculty. Without such petition, no record of honorable dismissal will be made.

#### COURSE OF STUDY

##### *The three-year course*

(Leading to the degree of Bachelor of Education.)

#### FIRST YEAR

First semester :	Units.	Second semester :	Units.
English 1.....	3	English 1.....	3
Spanish 1 or Latin 1.....	3	Spanish 1 or Latin 1.....	3
Mathematics 1.....	3	Mathematics 4.....	3
History 2.....	3	History 5.....	3
Science .....	3	Science .....	3
Total .....	15	Total .....	15

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Psychology 1 (psychology).....	3	Philosophy 1 (logic).....	3
Education 1 (history of education) ..	3	Education 2 (principles of teaching) .....	3
Teacher's course in major subject....	3	Teacher's course in major subject....	3
Elective in English.....	3	Elective in English.....	3
Latin 2 or Spanish 2.....	3	Latin 2 or Spanish 2.....	3
Total .....	15	Total .....	15

## THIRD YEAR

First semester:	Units.	Second semester:	Units.
Education 3 (philosophy of Education) .....	3	Education 3 (philosophy of Education) .....	3
Education 4 (principles of secondary education).....	2	Education 4 (principles of secondary education).....	2
Education 5 (practice teaching).....	3	Education 5 (practice teaching).....	3
Education 6 (educational psychology) .....	3	Education 6 (educational psychology) .....	3
Teacher's course.....	3	Teacher's course in minor subject..	3
Economics 1.....	3	Economics 2.....	3
Total .....	17	Total .....	17

*The additional year for the four-year course*

(Leading to the degree of B. S. in Education.)

First semester:	Units.	Second semester:	Units.
Education 7 (comparative education) .....	3	Education 7 (comparative education) .....	3
Education 8 (administration of public education).....	3	Education 8 (administration).....	3
Elective in major subject.....	6	Elective in major subject.....	6
Elective in English.....	3	Elective in English.....	3
Thesis .....	3	Thesis .....	3
Total .....	18	Total .....	18

## REQUIREMENTS FOR GRADUATION

The requirements for graduation in the three-year course are:

1. Satisfactory completion of the work as outlined above.
2. Good moral character.

Graduates of the three-year course shall receive the degree of Bachelor of Education.

The requirements for graduation in the four-year course are:

1. Satisfactory completion of the work as outlined above.
2. A thesis on some aspect of education approved by the faculty.

3. Good moral character.

Graduates of the four-year course shall receive the degree of Bachelor of Science in Education.

## THE UNIVERSITY HIGH SCHOOL

In July, 1916, the University High School was established in connection with the College of Education in order to provide

classes for practice teaching and for the study of problems in education. It also prepares students for the University.

The course of study prescribed for public secondary schools is followed, except when the special purposes of the school necessitate the modification of such course.

Each student of the University High School must pay a tuition fee of ₱20 per semester.

## COURSES OF INSTRUCTION

### ANTHROPOLOGY AND PHILIPPINE LANGUAGES

Assistant Professor BEYER.

*Anthropology 1. General Anthropology.*—A general introduction to the whole subject of anthropology, its history, aims, and methods; physical anthropology, archaeology, ethnology, ethnography, and language.

[3 hours, either semester; 3 units. Assistant Professor BEYER.

### TEACHER'S COURSE IN ANTHROPOLOGY

*Anthropology 3. Early History and Development of the Philippine Peoples.*—Prerequisite, Anthropology 2. (It is expected that this course will be developed and kept up to date by research on the part of the instructor, assisted by the students who are interested in taking advanced work in Anthropology Elective, second or third year.)

[3 hours, first semester; 3 units. Assistant Professor BEYER.

*Anthropology 6. Economic Development of Mankind; with special reference to its earlier stages.*

[3 hours, first semester; 3 units. Assistant Professor BEYER.

### BOTANY

*Botany 1. Elementary Botany.*—Laboratory work, lectures, and recitations covering the essentials of elementary botany. Elective, first year.

[9 hours, each semester; 3 units for each semester. Associate Professor BROWN.

*Botany 4. Teachers' Course in Botany.*—A course designed primarily for students in the School of Education who plan to become teachers of biology. The course is planned to cover the general morphology and classification of thallophytes, bryophytes, pteridophytes, and spermatophytes, some work in ecology, physiology, taxonomy of the flowering plants, including the preparation of the herbarium material, preservation of material for microscopical work, the preparation of microscopic slides, elementary work in staining, etc. Each student will be trained



to prepare his own material for study. Special attention will be given throughout the course to the collection of material for laboratory work; the selection of illustrative material from the local flora in relation to the general problems of the teaching of biology; and in methods of growing algae, fungi, ferns, etc., for use in the classroom. The course is open to all students who have had high-school biology or its equivalent.

[9 hours throughout the year. Professor MERRILL and Associate Professor BROWN.

*Botany 12. Economic Botany.*—A study of the classification and ecology of some of the more important cultivated plants. Elective, second or third year.

### CHEMISTRY

*Chemistry 1. General inorganic chemistry.*—Lectures, recitations, and laboratory work.

[9 hours throughout the year; 6 units. Assistant Professor ———.

### CIVICS

*Political Science 1. Principles of Political Science.*—An introductory course in the general elements of Political Science.

[3 hours, first semester; 3 units. Assistant Professor M. KALAW.

*Political Science 10. Teacher's Course in Government.*—A study of the methods of teaching government in the intermediate and secondary schools.

[3 hours, first semester; 3 units. Assistant Professor M. KALAW.

### ECONOMICS AND SOCIOLOGY

*Economics 1. Principles of Economics.*—Required first semester, third year.

[3 hours, first semester; 3 units. Professor C. BENITEZ.

*Economics 2. Economic Development of the Philippines.*—Required second semester, third year.

[3 hours, second semester; 3 units. Professor C. BENITEZ.

*Economics 3. Economic development of the United States.*—

[3 hours, first semester; 3 units. Professor C. BENITEZ.

*Economics 4. General Economic History.*—

[3 hours, first semester; 3 units. Professor C. BENITEZ.

*Sociology 1. Principles of Sociology.*—This course is prescribed in the second year of the Preparatory Law Course.

[3 hours, second semester; 3 units. Assistant Professor RIVERA.

*Sociology 2. Social Ethics.*—The practical application of ethical principles to social problems. Lectures, assigned readings and special reports. Prerequisite, Economics 1. This course

is open to students in the College of Law and the College of Medicine; it is also open to others who have taken or are taking Sociology 1, or Anthropology 1.

[3 hours, second semester; 3 units. Assistant Professor RIVERA.

*Sociology 6. Social Psychology.*—A study of the mind of crowds, groups, and society. The study is confined entirely to those uniformities that come into existence among men from social causes, as a result of mental contacts or mental interactions. Prerequisite Sociology 1 and Philosophy 1.

[3 hours, first semester; 3 units. Assistant Professor RIVERA.

### EDUCATION

*Education 1. History of Education.*—The growth and development of educational doctrine into its modern form. Required first semester, second year.

[3 hours, first semester; 3 units.

Professor F. BENITEZ.

Mr. CLAUDIO.

*Education 2. Principles of Teaching.*—A study of the fundamental ideas and their application to the more common subjects of the course of study. Required second semester, second year.

[3 hours, second semester; 3 units. Miss TIRONA.

*Education 3. Principles of Education.*—An interpretation of the aims and problems of education from the standpoint of society. Required, third year.

[3 hours throughout the year; 6 units. Professor F. BENITEZ.

*Education 4. Principles of Secondary Education.*—Required fourth year.

[2 hours throughout the year; 4 units. Professor OSBORN.

*Education 5. Practice Teaching.*—Under supervision of the College of Education. Required third year.

[3 hours throughout the year; 6 units. Miss TIRONA.

*Education 6. Educational Psychology.*—Applications of genetic and experimental psychology to education. Required third year.

[3 hours throughout the year; 6 units. Associate Professor TOWNSEND.

*Education 7. Comparative Education.*—A study of the educational systems of England, France, Germany, and Japan. Required fourth year.

[3 hours throughout the year; 6 units. Professor F. BENITEZ.

*Education 8. Educational Administration.*—With special reference to the routine of the public-school system of the Philippine Islands. Required third year.

[3 hours, throughout the year; 6 units. Professor MARQUARDT.

*Education 10. History of Education in the Philippines.*—The evolution of educational practices and institutions in the Philippines. Elective.

[2 hours, second semester; 2 units.

Professor F. BENITEZ.

Mr. CLAUDIO.

*Education 11. Modern Educational Theories.*—A critical consideration of the writings of Froebel, Herbart, and Dewey. Elective.

[2 hours, first semester; 2 units. Professor F. BENITEZ.

*Education 12. Supervision of Instruction in the Public Schools.*—Lectures, required readings, and discussions. This course will consider the guiding principles for the supervision of the different subjects in the curriculum; constructive criticism of class work of teacher; methods of measuring efficiency; supervision of discipline.

[2 hours throughout the year; 4 units. Professor OSIAS.

### ENGLISH

*English 1. Composition.*—A practical course in the writing and speaking of English. One day a week is devoted to a study of idiom and to the correction of typical errors; one day to oral expositions of assigned topics; one day to written themes. In addition to the weekly themes, at least four long compositions are required of each member of the class during the year. Required first year.

[3 hours, throughout the year; 6 units. Assistant Professor PEARL, Mr. VITERBO.

*English 2. Advanced Composition.*—A supplement to the training given in Course 1, intended to develop further the power of exact and lucid statement. Weekly themes and other written exercises on topics assigned by the instructor.

Elective for all students having credit for English 1.

[3 hours, first semester; 3 units. 3 hours, second semester; 3 units.

Associate Professor HILLES.

*English 4. History of English Literature.*—A general survey of the development of English literature to the close of the nineteenth century. An historical outline supplementing the study of representative works. Lectures on the great movements and influences in English literature. Weekly reports based on assigned reading.

Elective for all students having credit for English 1.

[3 hours throughout the year; 6 units. Associate Professor HILLES.

*English 5. General Literature.*—A discussion of masterpieces Occidental and Oriental. Lectures, extensive reading, and two

long reports. Special attention is given to the Epic and the Drama.

Prescribed for second year preparatory law students. Elective for all students having credit for English 1.

[3 hours throughout the year; 6 units. Associate Professor ST. CLAIR.]

*English 21. Secondary School English.*—A study of the aims, methods and educational values of the secondary school course in English literature and composition, with reading and analysis of representative selections from the list of American college requirements; and from the material prescribed for the secondary course in the Philippine high schools reports and discussions, criticism of student themes and practical drill.

Elective for students who have credit for ten units in English, including English 1 and 2.

Students intending to prepare themselves to teach English in the high schools should elect course numbered 2, 4, 7, 11, 12, 15, as well as the one just mentioned. Elective second or third year for *two* successive years. In 1917-18 the *Rhetoric in the High School* will be studied. In 1918-19 the *Literature of the High School* will be carefully examined.

[3 hours throughout the year; 6 units. Professor SNOW.]

#### GEOLOGY AND GEOGRAPHY

*Geology 1. General Geology.*—A general course, involving a study of geological processes with special emphasis on those which have been important in the geological history of the Philippines. Under this head are taken up the atmosphere as a geological agent, the work of running water, the work of ground water, the work of the ocean, structural geology, movements and deformation of the earth's body, vulcanism, and the geological functions of plants and animals. A brief treatment is given the work of snow and ice, and the classification of rocks. Students are given some practice in interpreting topographic maps.

Textbook: Chamberlain and Salisbury, *Geology*. Elective first year.

[3 hours a week throughout the year; 6 units. Professor ROWLEY.]

*Physiography.*—College physiography intended primarily for those who are taking the Teacher's Course.

Textbook: Salisbury, *Physiography*.

[3 hours a week throughout the year; 6 units. Professor ROWLEY.]

*Geography 4. Teacher's Course in Geography.*—The teaching of geography with special reference to Philippine schools. Elective second year.

[3 hours throughout the year; 6 units. Miss VALDEZ.

### HISTORY

*History 2. Modern Europe.*—The nineteenth century democratic and nationalistic movement. Required first semester, first year.

[3 hours, first semester; 3 units. Miss ALZONA.

*History 4. Philippine History.*—From the earliest time to the British occupation. A brief survey of prehistoric times, the discovery and conquest, the social and political conditions during the early years of Spanish rule, the Spanish colonial policy, the conflict between the church and the state, the period of obscurity.

Text: Special outlines of Philippine history.

[3 hours, first semester; 3 units. Assistant Professor FERNANDEZ.

*History 5. Philippine History.*—From the British occupation to American occupation. The reform movements, progress and revolutions, the rise of Philippine nationality.

Text: Special outlines of Philippine history.

[3 hours, second semester; 3 units. Assistant Professor FERNANDEZ.

*History 7-A. Ancient Civilization.*—This course is designed primarily for students who are preparing to teach history in the high school. Brief survey of the Greek and Roman civilization.

Prescribed in the three-year Course in Education for students majoring in history.

Texts: Bury's *Students' History of Greece* (Kimball edit.), Pelham's *Outline of Roman History* (4th edit. revised).

[3 hours, first semester; 3 units. Mr. ZAFRA.

*History 7-B. Method of Teaching History.*—This course is intended to go with History 7-A. It aims to give teachers training in the methods of teaching history.

Prescribed in the three-year Course in Education for students majoring in history.

Text: Johnson—*The Teaching of History*.

[3 hours, second semester; 3 units. Assistant Professor FERNANDEZ.

*History 9. Practicum in Philippine History.*—The Philippine Revolution, the Malolos Government, the end of the "Republic." Prerequisite, History 4, and History 5.

[3 hours, first semester; 3 units. Assistant Professor FERNANDEZ.

*History 10. Seminar in Philippine History.*—Intensive study of Philippine conditions and events from primary sources. Intended only for advanced students, who have reading knowledge of Spanish.

Prerequisites History 4, and History 5.

[6 hours, throughout the year; 6 units. Assistant Professor FERNANDEZ.

*History 25. United States History, 1492–1829.*—From the discovery to the election of Jackson. The colonies, the Revolution, the Constitution, the Growth of Nationality.

[3 hours, first semester; 3 units. Mr. ZAFRA.

*History 26. United States History, 1829–1909.*—From Jackson's administration to the present.

[3 hours, second semester; 3 units. Mr. ZAFRA.

### LATIN

*Latin 1. Elementary Latin.*—Elementary grammar and composition: Caesar's Gallic wars; (equivalent to two years of high-school work). Required first year of students majoring in English.

[3 hours throughout the year; 6 units. Mr. MARAVILLAS.

*Latin 2. Intermediate Latin.*—An intensive study of the following orations of Cicero: In Catilinam, Pro Archia, Pro Lege Manilia: Latin prose composition based on the selected orations. Required second year of students majoring in English.

[3 hours throughout the year; 6 units. Mr. MARAVILLAS.

### MATHEMATICS

*Mathematics 1. Advanced Algebra.*—Review in involution and evolution; surds; theory of exponents and quadratic equations; inequalities; pure, imaginary, and complex numbers; indeterminate linear equations; ratio and proportion; variation; progressions; undetermined coefficients; the binomial theorem for any exponent; logarithms. This course is required of all students in the College of Liberal Arts except those taking the course in pharmacy or preparatory engineering.

Textbook: Wells, Advanced Course in Algebra. Required first semester, first year.

[3 hours either semester; 3 units. Miss MARIANO.

*Mathematics 4. Plane Trigonometry.*—Development of general formulae. Practical problems; computation methods. A course required of students in preparatory law and in library science; elective for those in commerce or in preparatory medicine.

[3 hours, either semester; 3 units. Mr. ROA.

*Mathematics 50. Arithmetic, Algebra and Geometry.*—A training course designed primarily for future high-school teachers. Review of basic principles; solution of difficult problems; study of methods; discussion of texts and practice teaching. Open to students taking the course in Education and to Senior College students. Elective second year.

[3 hours throughout the year; 6 units. Miss MARIANO.

#### PHILOSOPHY AND PSYCHOLOGY

*Psychology 1. Elementary Psychology.*—Lectures, recitations and written exercises.

[3 hours, first or second semester; 3 units.  
Associate Professor TOWNSEND.  
Mr. CLAUDIO.

*Psychology 2. Experimental Psychology.*—This course is an analytical study of the elements of consciousness under controlled conditions. Textbook, laboratory practice, and lectures. Prerequisite, Psychology 1.

[3 hours, throughout the year; 6 units.  
(Double periods for laboratory practice as required.)  
[Associate Professor TOWNSEND.

*Psychology 3. Advanced Psychology.*—Lectures and extensive readings from standard authors. A seminar

[3 hours throughout the year; 6 units. Associate Professor TOWNSEND.

*Psychology 4. Physiological Psychology.*—Psychology from the standpoint of physiology. Experiments, readings, demonstrations, lectures, and textbook. Prerequisites, Anatomy 5 and Psychology 1.

[3 hours, second semester; 3 units. Associate Professor TOWNSEND ET AL.

*Psychology 5. Abnormal Psychology.*—Clinical psychology, including the standard measurements of intelligence, so-called multiple personalities and other "border land" conditions, and the mental conditions of the insane. Lectures and readings, clinical practice and studies. Prerequisite, Psychology 4.

[3 hours, throughout the year; 6 units. Associate Professor TOWNSEND ET AL.

*Philosophy 1. The Principles of Logic.*—Recitations, lectures and written exercises. Required second year. Prerequisite Psychology 1.

[3 hours, first or second semester; 3 units.  
Associate Professor TOWNSEND.  
Mr. CLAUDIO.

*Philosophy 2. The Principles and Methods of Science.*—Recitations, lectures, and inductive studies, especially of researches in education. Prerequisite Philosophy 1.

[3 hours second semester; 3 units. Associate Professor TOWNSEND.

*Philosophy 3. The History of Philosophy.*—A study of the leading philosophical and ethical theories from Thales to Kant, with some reference to more recent writers.

[3 hours second semester; 3 units. Associate Professor TOWNSEND.

*Philosophy 4. The Principles of Ethics.*—A search for the principles of right and wrong in the various relations of life. Recitations, lectures, and studies. Prerequisite Philosophy 3.

[3 hours, first semester; 3 units. Associate Professor TOWNSEND.

## PHYSICS

Professor WRIGHT, Chief of Department; Professor GURNEY; Messrs. KIBLER, and CORCUERA.

*Physics 1. Elementary Physics.*—A first course in the elements of physics designed primarily for students who do not present Entrance Physics, or whose preparation in physics is found upon trial, to be deficient.

[7 hours, first semester;  $\frac{1}{2}$  entrance credit.

[7 hours, second semester;  $\frac{1}{2}$  entrance credit.

*Physics 2. General Physics* (prerequisite, Entrance Physics or Physics 1).—A course of lectures, demonstrations, and recitations covering the subjects of mechanics, molecular physics, heat, electricity, sound, and light, especial attention being given to recent discoveries and developments in physics.

[3 hours, first semester; 3 units. 3 hours second semester; 3 units.

## PHYSICAL EDUCATION

*Physical Education, Teachers' Course.*—This course consists of lectures, text-book work and outside readings covering briefly personal and domestic hygiene, food, physical exercise and its result, body-posture and as many common games as time will permit.

Textbooks: Personal Hygiene, Pyle, Official Rules of games.

[3 hours, throughout the year; 6 units. Assistant Professor CASSIDY.

## SPANISH

Some proficiency in the use of the Spanish language is required for admission to Spanish 1. This is primarily a course in Spanish grammar and is not intended for beginners.

*Spanish 1.*—Elementary Spanish.

*Grammar.*—Two periods a week for the first semester with simple composition work based on Hills and Ford's Spanish Grammar as textbook; and one period a week during the second semester, using "La Gramatica Castellana de la Real Academia Española" as text.



*Composition.*—Practical composition writing on some familiar subjects to encourage the students to think and write correctly in Spanish together with letter writing for the purpose of making the students learn the Spanish methods of writing social and business letters. One period a week during the second semester.

*Reading.*—One period a week throughout the year. The following texts will be used: Loiseaux, Elementary Spanish Reading for the first semester, and Valdés, Capitán Ribot for the second semester supplemented with Valera, Pepita Jimenez as home reading. Special care will be taken to make the students learn the proper pronunciation, annunciation, and expression. Spanish idioms will be explained to the students who will be expected to learn them.

*Conversation.*—During the second semester the students will be encouraged to explain in Spanish everything they do in the class room, and in addition, the students will be required to make oral reports in Spanish based on their newspaper and magazine reading of some practical, every day problems.

[3 hours throughout the year; 6 units.

Assistant Professor LUZ.

Mr. HERVAS.

*Spanish 2. Intermediate Spanish.*—(Prerequisite, Spanish 1 or two years' work in a preparatory school.) General view of Spanish literature. At the beginning of the year a few exercises in the translation of English into idiomatic Spanish will be required, in order to eliminate from the class those who have not yet acquired a satisfactory command of the language. Thereafter a study will be made of the literature rather than of the language.

The work will comprise translation, interpretation, questions in grammar based on the text, and historical matter contained in the texts and introductions. Lectures will be given on the development of Spanish literature, introduced by a brief survey of Spanish history.

The following text will be read in class: Valera, Doña Luz; Rizal, Noli Me Tangere; Rizal, El Filibusterismo; Moratín, El Sí de las Niñas; Calderón, La Vida es Sueño; and Cervantes's Novelas Ejemplares.

For outside reading: Gil y Zárate, Guzmán el Bueno; Galdós, Doña Perfecta; Alarcón, El Capitán Veneno; Valera, Pepita Jimenez; Echagaray, El Gran Galeoto; and a play by Lope de Vega.

[3 hours throughout the year; 6 units. Assistant Professor LUZ.

*Spanish 3.*—(Prerequisite, Spanish 2.) The Golden Age in Spanish literature. Rapid reading in Spanish of some of the classics of this period, with interpretation of difficult passages. Such texts as the following will be used: Ford's Spanish Anthology, La Celestina, La Propaladia, La Vida de Lazarillo de Tormes, Ford's Selections from Don Quijote, and several plays by Lope de Vega.

Individual assignments will be given for detailed reports on various special topics; Ticknor's History of Spanish Literature and Rennert's Life of Lope de Vega will be used as reference books. In addition, the following texts will be assigned for home reading: G. de Castro, Las Mocedades del Cid; Tirso de Molina, Don Gil de las Galzas Verdes; Moreto, El Desdén con el Desdén; Calderón, El Mágico Prodigioso.

[3 hours throughout the year; 6 units. Mr. HERVAS.]

#### ZOOLOGY

Professor COWLES, Chief of Department; and Assistant Professors WHARTON, LIGHT, and DAY.

*Biology 1. Elementary Biology.*—This course is designed to be introductory to medicine and veterinary science as well as to give a general introduction to zoölogy. The first third of the year is devoted to the study of the gross anatomy, histology, physiology, habits, and embryology of the frog; the second third, to the study of those lower organisms which are of especial interest to students of medicine and veterinary science, stress being laid on experimental methods; the last third, to a careful study of the anatomy of the shark and the cat.

Textbook: Parker and Haswell, Manual of Zoölogy.

[9 hours throughout the year; 6 units.]

*Zoölogy 4. Teachers' Course in Zoölogy.*—A course in which a study of the animals of the Philippines will be made with especial regard to their distribution, relationships, and adaptations. Elementary instruction will be given in the preparation of material for microscopic work and a certain amount of field work be required.

[5 hours throughout the year; 6 units. Assistant Professor LIGHT.]

#### GENERAL INFORMATION

##### MEDICAL EXAMINATION

All students of the college are required to undergo a medical examination at the beginning of each semester. This examination is a prerequisite to registration. No fee will be charged for the examination.

## HOSPITAL FACILITIES AND MEDICAL ATTENDANCE

The Philippine General Hospital grounds adjoin the campus of the University. Students of the University may there receive emergency attendance free, and will be admitted for treatment in cases of illness at the usual reasonable rates.

## LIBRARIES

The Library of the Colleges of Liberal Arts and Education occupies a room on the second floor of University Hall. The collection numbers 1,570 books and pamphlets. All books are catalogued by author and subject and represent some of the best modern writing in the departments of literature, history, economics and education. Philippine history and civics receive ample attention. The room is also used by the students as a reading room and study and is open from 7.45 in the morning until 10 o'clock in the evening. By a system of loans from the Philippine Library the number of books available is greatly increased.

Through the courtesy of the librarian, the privileges of the library of the Military Information Bureau are extended to the faculty of the University of the Philippines. This library contains a good collection of books on military history, on colonization and colonial government, on current problems of the Orient, as well as all the essential secondary material for the study of Philippine history. It is located in Fort Santiago, Manila.

The privileges of the Circulating Library of Manila are also extended to students of the University free of charge. The following regulations must be observed:

1. The student shall present a statement, signed by the secretary, to the effect that he is a regularly enrolled student of the University and in good standing.
2. The student shall agree in writing to obey the regular rules and regulations of the library and to be personally responsible for any loss that the library may sustain through him.
3. The University of the Philippines will require its students to fulfill strictly all the rules and regulations of the library.
4. These privileges will be denied any student whenever any of the rules and regulations are infringed.

The reading room of the library of the Bureau of Science is open to all members of the University of the Philippines. This reading room contains standard dictionaries in English, Spanish, and other languages, sets of encyclopedias, year books, bibli-

agrophies, Who's Who's, a set of Blair and Roberston, "The Philippine Islands," etc. Students can usually arrange to take books needed for home study from the library for short periods of time.

#### EXPENSES

The expenses connected with the college courses consist of the general deposit, laboratory fees, athletic fees, and the cost of textbooks. The deposit and athletic fees are the same for all.

The laboratory fees are not likely to exceed ₱20 a semester. The cost of books is variable, but every student should be prepared to spend from ₱60 to ₱100 a year for books. A student who is taking no laboratory courses may find that ₱80 a year will cover the expenses mentioned. One who is taking a considerable amount of laboratory work and whose books are more expensive may need ₱150.

Room and board in Manila cost from ₱15 to ₱50 a month.

#### RULES GOVERNING ABSENCES OF STUDENTS OF THE COLLEGE OF EDUCATION.

The following rules have been adopted by the Faculty of the College of Education. The operation of these rules is entrusted to the Dean:

##### 1. DEFINITION.

(a) A student who, for any reason whatever, stays away from the classroom during a recitation, a lecture, or a laboratory exercise will be absent from that class exercise.

(b) A student who enters the classroom five minutes or more late will be recorded as absent, provided that tardiness resulting from late dismissal from the class previously attended or some unavoidable cause to be decided by the instructor shall not constitute an absence.

(c) An absence recorded against any student may be excused by the Dean if, in the latter's opinion, the student was forced to be absent by sickness or some other unavoidable cause. Absences so excused will be known as excused absences.

##### 2. PENALTIES FOR EXCESSIVE ABSENCES.

(a) A student whose number of absence for one semester exceeds 15 per cent of the recitation or lectures hours in any one subject for that semester will have his final semestral grade reduced by *one* point by the instructor; provided that no reduc-

tion of grade shall be made should the majority of absences be excused absences.

(b) A student whose number of absences for one semester exceeds 20 per cent of the recitation or lecture hours in any one subject for that semester will be dropped automatically from the class roll and given a grade of *five* by the instructor; provided that no grade shall be given should the majority of absences be excused absences.

### 3. PETITION FOR EXCUSE OF ABSENCES.

(a) Any student who wishes to be excused from an absence shall send a written petition to the Dean not later than two days from the day of his return to the class, Sundays and holidays excepted.

(b) The day after the petition has been handed in, the student must call for the same at the Dean's office and show it to his instructors who shall note these excuses on their record of absences.

(c) Petitions not conforming with the above regulations as to time limit and form shall not be considered.

### 4. REPORT OF ABSENCES BY INSTRUCTORS.

(a) The instructor shall keep a record of all the absences of students.

(b) Any student falling under the penalties prescribed in section 2, paragraph *a* and *b* shall be immediately reported by the instructor to the Dean for the latter's information. Students so penalized shall be notified by the Dean.

#### *Summary of Enrollment of the College of Education during the Academic Year 1917-18.*

Fifth year .....	1
Fourth year .....	7
Third year .....	37
Second year .....	51
First year .....	142
Total .....	238

#### *University High School.*

Second year .....	34
First year .....	40
Total .....	74
Gran total .....	312

*Summary of Enrollment of the College of Education during the Academic  
Year 1918-1919.*

Fifth year .....	4
Fourth year .....	16
Third year .....	41
Second year .....	83
First year .....	121
Total .....	<u>265</u>

*University High School.*

Fourth year .....	27
Third year .....	62
Second year .....	60
First year .....	122
Total .....	<u>271</u>
Grand total .....	<u>536</u>

THE UNIVERSITY OF THE PHILIPPINES

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COLLEGE OF MEDICINE AND SURGERY

INCLUDING

THE SCHOOL OF DENTISTRY

THE GRADUATE SCHOOL OF TROPICAL MEDICINE AND

PUBLIC HEALTH

AND

THE SCHOOL OF PHARMACY

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TWELFTH ANNUAL ANNOUNCEMENT AND CATALOGUE

**DEAN'S OFFICE**

**COLLEGE BUILDING, 547 CALLE HERRAN. ERMITA.  
OFFICE HOURS 9 TO 10 DAILY.**

**Secretary's Office**

**Open daily from 8 a. m. to 12 m., and from 1 p. m. to 4 p. m.; Saturday,  
8 a. m. to 1 p. m.**

**All correspondence should be addressed to the Dean, College of Medicine  
and Surgery, Manila, Philippine Islands.**



## COLLEGE OF MEDICINE AND SURGERY



## Officers of Administration

---

IGNACIO VILLAMOR,  
President of the University.

FERNANDO CALDERON,  
Dean, College of Medicine and Surgery and Chief, Department of Obstetrics.

JOSÉ ALBERT,  
Chief, Department of Pediatrics.

SIXTO DE LOS ANGELES,  
Chief, Department of Legal Medicine,  
Medical Economics and Ethics.

ARISTON BAUTISTA Y LIM,  
Chief, Department of Medicine.

BOWMAN CORNING CROWELL,<sup>1</sup>  
Chief, Department of Pathology and Bacteriology,  
Director, Graduate School of Tropical Medicine and Public Health.

MARIANO VIVENCIO DEL ROSARIO,  
Director, School of Pharmacy.

ROBERT BANKS GIBSON,  
Chief, Department of Physiology and Acting Chief, Department of Pharmacology.

POTENCIANO GUAZON,  
Chief, Department of Surgery.

ANASTACIA GIRON, R. N.  
Superintendent, School of Nursing.

FRANK G. HAUGHWOUT,  
Chief, Department of Parasitology.

JOHN D. LONG,  
Chief, Department of Hygiene.

LOUIS OTTOFY,  
Director, School of Dentistry.

EDWARD S. RUTH,  
Chief, Department of Anatomy.

ARISTEO R. UBALDO,  
Chief, Department of Ophthalmology, Otolaryngology, and Laryngology.

H. WINDSOR WADE,  
Professor of Pathology and Bacteriology, Chief of Department,  
Director, Graduate School of Tropical Medicine and Public Health.

ORLIE S. SULLIVAN,  
Secretary, College of Medicine and Surgery and Superintendent of the City Morgue.

## STANDING COMMITTEES OF THE COLLEGE

### COMMITTEE ON GRADUATE SCHOOL

Professor WADE.  
Professor ALBERT.  
Professor BAUTISTA.  
Professor HAUGHWOUT.  
Professor S. V. DEL ROSARIO.

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<sup>1</sup> Resigned.

COMMITTEE ON ADMISSION, ADVANCEMENT AND PROMOTION

Professor RUTH.  
Assistant Professor DE LA PAZ.  
Doctor TOLENTINO.

CATALOGUE AND CURRICULUM COMMITTEE

Professor GIBSON, Chairman.

Professor ALBERT.  
Professor DE LOS ANGELES.  
Professor WADE.  
Professor HAUGHWOUT.  
Professor RUTH.  
Professor OTTOFY.

Professor GUAZON.  
Associate Professor DEL ROSARIO, S.  
Associate Professor HOCSON.  
Associate Professor SISON.  
Associate Professor UBALDO.  
Doctor TOLENTINO.

CLINICAL COMMITTEE

Dean CALDERON, Chairman and Chief of Clinics.

Professor ALBERT.  
Professor BAUTISTA.  
Professor GUAZON.

Professor GUERRERO.  
Professor ROXAS.  
Associate Professor UBALDO.

LIBRARY COMMITTEE

Professor ALBERT.  
Professor DE LOS ANGELES.  
Doctor GUTIERREZ.

COMMITTEE ON MILITARY DRILL

Doctor GERVASIO SANTOS.  
Mr. ORLIE S. SULLIVAN.

## **Faculty of the College of Medicine and Surgery**

---

IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

FERNANDO CALDERON, B. A., M. D.,  
Dean of the College of Medicine and Surgery and Professor of Obstetrics,  
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ROBERT BANKS GIBSON, Ph. B., Ph. D.,  
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College of Medicine and Surgery.

POTENCIANO GUAZON, B. A., M. D.,  
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College of Medicine and Surgery.

LUIS GUERRERO, M. D.,  
Professor of Tropical Medicine.  
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FRANK GODDARD HAUGHWOUT,  
Professor of Protozoology and Parasitology, Chief of Department.  
College of Medicine and Surgery.

JOHN D. LONG, M. D.,  
Professor of Hygiene, Chief of Department.  
Bureau of Health, Manila.

LOUIS OTTOFY, D. D. S., M. D.,  
Professor of Dentistry and Director, School of Dentistry.  
College of Medicine and Surgery.

MARIANO VIVENCIO DEL ROSARIO, A. B., Phar. D., M. S., M. D.,  
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College of Medicine and Surgery.

BALDOMERO ROXAS, B. A., M. D.,  
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417 Sales, Santa Cruz, Manila.

EDWARD S. RUTH, M. D.,<sup>2</sup>  
Professor of Anatomy, Chief of Department.  
College of Medicine and Surgery.

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<sup>1</sup> Resigned.

<sup>2</sup> On leave.

H. WINDSOR WADE, M. D.,  
Professor of Pathology and Bacteriology, Chief of Department;  
Director, Graduate School of Tropical Medicine and Public Health.  
College of Medicine and Surgery.

CHARLES SUMNER BANKS, M. S.,  
Professor of Entomology.  
College of Agriculture, Los Baños.

JOSE EDUQUE, M. D.,  
Associate Professor of Surgery.  
Philippine General Hospital.

ARTURO GARCIA, B. A., M. D.,  
Associate Professor of Anatomy.  
College of Medicine and Surgery.

JOSE HILARIO, M. D.,<sup>1</sup>  
Associate Professor of Pathology and Bacteriology.  
Philippine General Hospital.

FELIX HOCSON, B. A., Ph. C., Phar. D.,  
Associate Professor of Pharmacy.  
College of Medicine and Surgery.

SALVADOR VIVENCIO DEL ROSARIO, B. A., M. D.,  
Associate Professor of Hygiene.  
Bureau of Health, Manila.

ANTONIO GUILLERMO SISON, B. A., M. A., M. D.,<sup>2</sup>  
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Corner Calles Taft and Remedios, Malate, Manila.

ARISTEO R. UBALDO, B. A., L. M.,  
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Chief of Department.  
Philippine General Hospital.

ISABELO CONCEPCION, M. D.,  
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College of Medicine and Surgery.

RICARDO FERNANDEZ, M. D.,  
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PERPETUO GUTIERREZ, M. D.,  
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JESUS GONZALEZ, B. A., M. D.,  
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668 M. H. del Pilar, Malate.

CHARLES HENRY MANLOVE, B. S., M. D.,<sup>3</sup>  
Assistant Professor of Pathology and Bacteriology.  
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MARIA PAZ MENDOZA-GUAZON, M. D., D. T. M.,  
Assistant Professor of Pathology and Bacteriology.  
College of Medicine and Surgery.

<sup>1</sup> On leave.

<sup>2</sup> In U. S. on fellowship.

<sup>3</sup> Resigned.

DANIEL DE LA PAZ, M. D.,  
Assistant Professor of Pharmacology.  
College of Medicine and Surgery.

CARMELO MALABANAN REYES, M. D.,  
Assistant Professor of Surgery.  
Philippine General Hospital.

HONORIA ACOSTA-SISON, M. D.,<sup>1</sup>  
Assistant Professor of Obstetrics.  
Corner Calles Taft and Remedios, Malate.

ANTONIO DANIEL VAZQUEZ, B. S., M. D.,  
Assistant Professor of Surgery.  
Philippine General Hospital.

HERMINIO E. VELARDE, M. D.,  
Assistant Professor of Eye, Ear, Nose and Throat.  
Philippine General Hospital.

LAWRENCE DILLAR WHARTON, B. A., M. A.,  
Assistant Professor of Zoology.  
College of Medicine and Surgery.

TEODORO C. ARVISU, M. D.,  
Instructor in Pediatrics.  
Philippine General Hospital.

MIGUEL CAÑIZARES, L. M.,  
Instructor in Anatomy.  
College of Medicine and Surgery.

AMPARO CONCHA-BRILLANTES, M. D.,  
Instructor in Hygiene.  
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ELIAS DOMINGO, M. D.,<sup>2</sup>  
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GREGORIO FARRALES, M. D.,  
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FAUSTINO GARCIA, M. D.,  
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CRISTOBAL MANALANG, M. D., D. T. M.,  
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JOAQUIN MARAÑON, Ph. G., B. S.,  
Instructor in Pharmacy.  
College of Medicine and Surgery.

RICARDO D. MOLINA, B. A., L. M.,<sup>3</sup>  
Instructor in Anatomy.  
College of Medicine and Surgery.

JUAN C. NAÑAGAS, M. D.,  
Instructor in Anatomy.  
College of Medicine and Surgery.

<sup>1</sup> In U. S. on leave of absence.

<sup>2</sup> In U. S. on fellowship.

<sup>3</sup> Resigned.

REGINO G. PADUA, M. D.,<sup>1</sup>  
Instructor in Surgery.

Philippine General Hospital.

GUILLERMO RUSTIA, L. M.,  
Instructor in Obstetrics.

Philippine General Hospital.

DOMICIANO J. SANDOVAL, D. D. S.,  
Instructor in Dentistry.

Philippine General Hospital.

GERVASIO SANTOS, M. D.,  
Instructor in Surgery.

Philippine General Hospital.

MARIANO TOLENTINO, M. D.,  
Instructor in Obstetrics.

Philippine General Hospital.

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<sup>1</sup> Resigned.



## Other Officers of Instruction

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### LECTURERS ON SPECIAL TOPICS

JUAN AUSTIN,  
Lecturer on Vital Statistics (Graduate School).  
Bureau of Health, Manila.

EDWARD L. BARBER, B. S.,  
Lecturer on Sanitary Hygiene (Graduate School).  
Bureau of Health, Manila.

E. C. ERNST, M. D.,  
Lecturer on Maritime Quarantine (Graduate School).  
Lecturer on Dangerous Communicable Diseases (Graduate School).  
U. S. Bureau of Quarantine Service, Manila.

PROCESO GABRIEL, M. D.,  
Lecturer on Infant Mortality (Graduate School).  
Bureau of Health, Manila.

MANUEL GOMEZ, M. D.,  
Lecturer on Social and Vital Statistics (Graduate School).  
Bureau of Health, Manila.

VICENTE DE JESUS, M. D.,  
Lecturer on the Care of Children of the State and on Tuberculosis (Graduate School).  
Bureau of Health, Manila.

CLAUDE E. NORRIS, M. D.,  
Lecturer on Prison Sanitation and Prison Administration (Graduate School).  
Chief, Prison Sanitation, Bilibid Prison, Manila.

Miss MARY POLK, B. A., M. A.,  
Lecturer on Library Methods,  
Bureau of Science, Manila.

SIMON F. TECSON, D. D. S.,  
Lecturer on Dentistry,  
162 Escolta, Manila.

MICHAEL J. WALSH,  
MAMERTO TIANCO,  
Lecturers on Sanitary Office Administration (Graduate School).  
Bureau of Health, Manila.

.....  
Lecturer on Life Insurance Medicine, and Military Hygiene (Graduate School).

### ASSISTANTS

ANTONIO FERNANDEZ ABAD, L. M.,  
Department of Anatomy.

VALENTIN S. AFABLE, M. D.,  
JANUARIO ESTRADA, M. D.,  
ANICETO Y. MANDANAS, M. D.,  
Department of Surgery.

ANASTACIA VILLEGAS, M. D.,  
Department of Legal Medicine.

ASSISTANTS—Continued.

TRINIDAD BARUELOS, M. D.,

JOSE CASTILLO, L. M.,

FACUNDO ESQUIVEL, M. D.,

PEDRO T. LANTIN, M. D.,

Department of Medicine.

LAMBERTO LEIVA, M. D.,

Department of Parasitology.

SANTIAGO OCHOA, M. D.,

Department of Eye, Ear, Nose and Throat.

FELIX R. FERNANDEZ DE LEON, M. D.,

JOAQUINA E. TIRONA, M. D.,

Department of Pediatrics.

WALFRIDO DE LEON, M. D.,

BUENAVENTURA SILVA, L. M.,

Department of Obstetrics.

FIDEL CUAJUNCO, M. D.,

ROMULO GUEVARRA, M. D.,

Department of Physiology & Pharmacology.

CANDELARIA V. LEIVA,

School of Pharmacy.

(For instruction in Dentistry, see Faculty, School of Dentistry; entomology, Faculty, College of Agriculture; Pharmacy, Faculty, School of Pharmacy; Zoölogy and Library Methods, Faculty, College of Liberal Arts).

## HISTORY OF THE COLLEGE OF MEDICINE AND SURGERY <sup>1</sup>

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The College of Medicine and Surgery is an outgrowth of the educational system instituted throughout these Islands by the Philippine Commission, and it is also a natural development of the Bureau of Science and the Bureau of Health.

The movement looking toward the establishment of such a school had its origin at the Second Annual Meeting of the Philippine Islands Medical Association in 1905, at which meeting the proceedings demonstrated the great need of supplying physicians to the people of these Islands. Statistics showed that there was one physician to each 21,209 of the population of the Archipelago, or to each 430 square miles of territory.

The Philippine Medical School was established by the Philippine Commission as the first department of the future University of the Philippines and was opened for the instruction of students June 10, 1907.

The Philippine Medical School was founded in accordance with the following Act:

Act No. 1415.—An Act establishing a Medical School and defining the manner in which it shall be controlled and conducted.

*By authority of the United States, be it enacted by the Philippine Commission, that:*

SECTION 1. There is hereby established in the city of Manila a medical school for the purpose of giving instruction to qualified students. It shall be known as the Philippine Medical School.

The school is hereby made a body corporate, but shall be reincorporated under the new corporation law as soon as the same is enacted.

SEC. 2. The powers of the corporation until reincorporated as above provided are hereby vested in a body to be known as "the board of control of the Philippine Medical School" which shall consist of the Secretary of Public Instruction, the Secretary of the Interior, one member of the Philippine Commission, and one other member to be designated by the Governor-General. The dean of the faculty of the school, after the establishment of said faculty, also shall be a member of the board of control.

SEC. 3. The board of control shall have the following powers:

(a) To receive endowments and bequests and to provide for their investment and disbursement according to the conditions of the endowment or bequest.

(b) To fix the matriculation fee, the graduation fee, and fees for laboratory courses.

(c) To receive and appropriate for the ends specified by law such sums as may be provided for the support of the school by legislation of the Philippine Commission.

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<sup>1</sup> The College of Medicine and Surgery was established by the Government of the Philippine Islands as the Philippine Medical School in accordance with Acts Nos. 1415 and 1870.

(d) To recommend to the Governor-General, for appointment, the faculty of the school and fix the duties and responsibilities of its members, subject to the provisions of this Act.

(e) To confer the degree of Doctor of Medicine upon such persons as are recommended by the faculty.

(f) To make to the Philippine Commission recommendations in regard to the school and to present estimates for appropriations necessary for its maintenance.

(g) To make all necessary by-laws.

SEC. 4. Upon request of the board of control, heads of Bureaus and Offices of the Insular Government are authorized to loan such apparatus and supplies as may be required and to detail employees for duty in the Medical School, and employees so designated shall perform such duty and the time so employed shall count as part of their prescribed service to the Government. Bureaus and Offices loaning supplies to the Medical School shall, if the same are expended by the school, be reimbursed from the appropriation against which the expenses of the Medical School are a proper charge.

SEC. 5. The public good requiring the speedy enactment of this bill, the passage of the same is hereby expedited in accordance with section two of "An Act prescribing the order of procedure by the Commission in the enactment of laws," passed September twenty-sixth, nineteen hundred.

SEC. 6. This Act shall take effect on its passage.

Enacted, December 1, 1905.

The Philippine Medical School became a college of the University of the Philippines, and its name was changed to the "College of Medicine and Surgery," by section 6, paragraph (b), of Act 1870, which, as amended by Act No. 2024, reads as follows:

To provide for the establishment of a College of Liberal Arts; a College of Law; a College of Social and Political Science; a College of Medicine and Surgery; a College of Pharmacy; a College of Dentistry; a College of Veterinary Science; a College of Engineering; a College of Mines; a College of Agriculture; and a School of Fine Arts; and colleges which the Legislature may provide for by appropriation: *Provided*, That the Board of Regents may establish these colleges or any of them as soon as in its judgments conditions shall favor their opening and funds shall be available for their maintenance: *And provided further*, That the Board of Regents, by and with the approval of the Governor-General, shall have the power to combine two or more of the colleges authorized by this Act, in the interests of economy and efficiency: *And provided further*, That the Philippine Medical School, as established by Act Numbered Fourteen hundred and fifteen, as amended, shall become the College of Medicine and Surgery of the Philippine University as soon as two or more colleges of the University of the Philippines shall have been established and in actual operation.

On December 8, 1910, the provisions of Act No. 1870 having been complied with, the control and management of the school passed to the Board of Regents, and in accordance with said Act the name was changed to "College of Medicine and Surgery."

## THE HOSPITAL AND MEDICAL SCHOOL BUILDINGS

In the year 1908 the Philippine Commission appropriated the sum of ₱780,000 for the construction of a modern hospital of reinforced concrete, planned on the pavilion system, to accommodate 350 patients. Additional wards can be added in the future, the final capacity being 1,500 patients. This institution, known as the Philippine General Hospital, was completed and opened to the public on September 1, 1910. At the time of providing for the hospital the Philippine Commission set aside the sum of ₱250,000 for a Medical School laboratory building, to be erected on the same campus as the Bureau of Science and the hospital.

The Medical School building was completed and opened for class work and instruction on July 1, 1910. It is a modern reinforced concrete structure with a total frontage of 68.54 meters, embracing a main entrance flanked by general offices and faculty room, of 18.40 meters width, and two wings of 25.07 meters each. The two wings are 15 meters deep.

In one wing on the first floor is the general laboratory of bacteriology and pathology, laboratories for the staff, and the private laboratory of the chief of the department. The other first-floor wing is occupied by the laboratories of hygiene and of legal medicine and the pathological museums.

In one wing of the second floor are located the laboratory of histology and embryology, the anatomical library and museum, and the private laboratory of the chief of the department of anatomy. In the other wing is the general laboratory of physiology and pharmacology, the laboratory of physiological chemistry, an operating room for animals, and the private laboratory of the chief of the department.

The main building, or center, is 18.40 meters wide by 50 meters deep. On the ground floor are the general office, main corridor or lobby, storeroom, autopsy room and cold storage room for bodies. On the second floor are the laboratory of parasitology, the private laboratory of the chief of the department of parasitology, two general lecture rooms and an amphitheater equipped with a reflectoscope. Each lecture room has a seating capacity of about sixty students; that of the amphitheater is about one hundred and twenty. The third floor of the building is given over to the department of anatomy. It is divided into four dissection rooms, a preparation room, and a private laboratory. All these floors are equipped with modern wash and toilet rooms.

The city morgue is located in the College of Medicine and Surgery building. All autopsies are performed by the department of pathology, and the material is available for study by the students.

Animal houses are located on the same campus as the College of Medicine and Surgery and at Pandacan.

#### CLINICAL FACILITIES

The services for the teaching of clinical medicine and surgery consist in the control of the free beds in the Philippine General Hospital and of the clinical material of its Free Dispensary. Clinical instruction in dangerous communicable diseases is given at the Hospital for Infectious Diseases at San Lazaro, with its departments for incurable tuberculosis, smallpox, diphtheria, plague, cholera, and other dangerous communicable diseases. The Gota de Leche for the feeding and care of abnormal and under-developed children, the Free Dispensary of the Philippine General Hospital, and Tuberculosis Free Dispensaries of the city of Manila are available for teaching purposes.

The Philippine General Hospital is a large, modern, concrete, well-equipped pavilion hospital of about 300 beds for the care of acute and curable diseases. The Dean of the College of Medicine and Surgery is Director of the Philippine General Hospital. The Executive Officer of the Hospital is a member of the faculty. The Philippine General Hospital has its own appropriation which is solely under the control of the Director of the institution. While, administratively, it belongs to the Department of the Interior, the Secretary of the Interior is also chairman of the Committee on the College of Medicine and Surgery of the Board of Regents of the University of the Philippines. The personnel and departments in the College and Hospital are practically identical. All officers and teachers of the College of Medicine who have duties in connection with the Hospital hold corresponding appointments in the Hospital. All officers and employees of the Hospital, who have teaching functions, hold corresponding appointments in the College of Medicine and Surgery.

The large number of patients visiting the various departments of the Free Dispensary of the Philippine General Hospital has offered excellent opportunity for dispensary teaching and also for supplying the hospital with clinical material for teaching. During the year 1916, there were 46,539 patients making "first visits" to the Free Dispensary. Of these "first visits" the various departments shared as follows: Medicine, 16,031; sur-

gery, 8,428; skin, 999; obstetrics, 500; eye, ear, nose, and throat, 6,457; urology, 720; school children, 91; dental, 3,750; gynecology, 1,558; pediatrics, 7,019; tuberculosis, 887; and bailarinas, 99.

Taken altogether, the college has under its control more valuable clinical material, covering the widest possible range of disease conditions, than it can possibly use to the best advantage of the students.

#### LIBRARY FACILITIES

The library of the Bureau of Science is open to the students of the College of Medicine and Surgery. This library, consisting of more than 34,000 bound volumes and more than 20,000 pamphlets, is particularly rich in literature on medicine and the allied sciences, and includes complete files of the more important medical journals and society publications. The library contains sets, complete to date, of both series of Index Medicus and of the Index Catalogue of the United States Surgeon-General's Office.

#### MICROSCOPES AND LABORATORY APPARATUS

The college is equipped with a sufficient supply of microscopes and other clinical and laboratory apparatus for the use of the students.

Owing to the constant use that is made of microscopes during the laboratory courses and in clinical studies, each student must have a microscope for his own use, and it is recommended that he purchase one. Otherwise the students may obtain microscopes upon a memorandum-receipt from the college. The microscopes must be returned in good condition, or charges for repairs will be made against the students.

#### DEPOSIT

Each student must deposit ₱20 before beginning any laboratory course. The cost of all apparatus and special supplies issued to the student will be charged against this deposit.

Further deposits will be required, if needed, to cover the cost of supplies issued to the student. The student will be credited at the end of the course for the apparatus and supplies returned to the property clerk in good condition.

#### FEEES

The tuition fee in the College of Medicine and Surgery for the courses leading to the degree of Doctor of Medicine is ₱50 per semester. *This tuition fee is not applicable to students who matriculated in the college before the close of the academic year 1914-15.*

A laboratory fee of ₱5 per semester will be charged in those

laboratory courses of not more than nine hours a week; ₱10 will be charged for laboratory courses of more than nine hours a week.

Every student will pay an athletic fee of ₱1 per semester, which will be turned in to the treasury of the Athletic Association.

For fees in the Graduate School of Tropical Medicine and Public Health, see page 211 for the School of Dentistry, see page 201; and for the School of Pharmacy, page 237.

#### ADMISSION REQUIREMENTS

The requirement for admission to the College of Medicine and Surgery is the satisfactory completion of a two year Preparatory Medical Course in the College of Liberal Arts, University of the Philippines or its equivalent. The course is as follows:

##### *Preparatory medical*

FIRST YEAR			
First semester:	Units.	Second semester:	Units.
English 1.....	3	English 1.....	3
French or German 1.....	3	French or German 1.....	3
Biology 1.....	3	Biology 1.....	3
Chemistry 1.....	3	Chemistry 1.....	3
Mathematics 1.....	3	Mathematics 4.....	3
Total .....	15	Total .....	15
SECOND YEAR			
First semester:	Units.	Second semester:	Units.
Physics 2-M.....	4	Physics 2-M.....	4
French or German 2.....	3	French or German 2.....	3
Chemistry 2.....	3	Chemistry 2.....	3
Chemistry 3.....	3	Botany 1.....	3
History 2.....	3	History 5.....	3
Total .....	16	Total .....	16

It is recommended that students taking this course be advised to register if possible for Zoölogy 11.

NOTE.—One unit of credit in the University of the Philippines, is one lecture or recitation each week for the period of a complete semester. In all courses, two and a half to three hours of laboratory work are regarded as the equivalent of the recitation or lecture.

All candidates who desire to enter the College of Medicine and Surgery must pass a physical examination before being admitted. This examination will be held at the College of Medicine and Surgery from June 24 to June 29, 1918.

The ability to speak and write good English is a necessary qualification for admission to the College of Medicine and Surgery.

#### ADMISSION TO THE FIRST-YEAR CLASS

Application for admission to the first-year class of the College of Medicine and Surgery should be made directly to the Dean of the College at least two weeks before the opening of the first



semester. Such applications will be referred, through the Committee on Admissions of the College, to the Faculty of the College of Medicine and Surgery for definite action and will then be certified to the secretary of the University for registration.

A candidate from another institution should forward with his application an official certificate from the college or university already attended of (1) honorable dismissal, (2) time of attendance with the amount of work that he has completed, and (3) a detailed statement of the work which he has completed, including the numerical or other grades attained. Such a certificate should be accompanied by the catalogue or announcement of the institution attended.

#### ADMISSION TO ADVANCED STANDING

Applications for admission to advanced standing in the College of Medicine and Surgery shall be addressed to the Dean and should be accompanied by an official certificate from the college or university already attended. Such applications will be referred for investigation and definite action, through the Committee on Admissions of the College, to the faculty of the College of Medicine and Surgery, and will then be forwarded to the secretary of the University for registration.

#### SPECIAL STUDENTS

Persons of requisite age may be admitted to courses in the College of Medicine and Surgery as special students not candidates for a degree by the faculty of the College of Medicine and Surgery. Such applicants must be recommended by the College Committee on Admissions and by the chief of the department, in which they desire to take a large part of their work, to the faculty of the College of Medicine and Surgery.

#### GRADUATE STUDENTS

Candidates for the degree of Master of Science may take their major subjects in the College of Medicine and Surgery.

The courses leading to the degrees of Doctor of Tropical Medicine and Doctor of Public Health are open to any graduate in medicine from the College of Medicine and Surgery, or from other schools granting a degree of Doctor of Medicine or its equivalent, which is recognized by the faculty as equivalent to its degree of Doctor of Medicine. (For particulars of these courses see page 213 et seq.)

#### ATTENDANCE

Students must be in actual attendance in the College within the first week of each annual session and thereafter, except

in exceptional cases to be dealt with by the Dean on recommendation of the Committee on Admissions, Advancement, and Promotion.

Actual attendance at classes is insisted on except for good cause, such as for sickness, and under no circumstances is credit given for any course where the attendance has been less than 80 per cent of the full time.

#### EXAMINATIONS

Examinations will be held at the end of each semester, upon the completion of each subject, and at such other times as the teacher in charge of a course may elect.

A fee of \$10 will be charged for special examinations.

Candidates will be admitted to examinations for advanced standing only upon authority granted by the faculty. Such examinations will be held only at the time of the regular examinations.

#### PROMOTIONS, CONDITIONS, AND FAILURES

A regularly enrolled medical student, who has not received a condition or failure in any of the subjects of the prescribed course taken during the academic year, or who has removed all conditions before the beginning of the following academic year, will be advanced to and enrolled in the next higher class.

Attention is called to the following rules of the faculty in regard to conditions and failures:

1. That a grade of 4<sup>1</sup> shall indicate that the student receiving such grade is conditioned in the course in which the mark was received. Further, that he may be given a reëxamination in the subject matter of the course, or be required to do additional work or both, at the discretion of the instructor in charge.

2. That failure to obtain university credit in a course in which a grade of 4 has been received, before the beginning of the next academic year, shall mean that the grade of 4 has become a grade of 5.

3. That a grade of 5 shall indicate that the student receiving such grade has failed in the course in which the grade was received. Further, that he will not be entitled to reëxamination until he repeats, with the regular class, the course in which he has failed.

4. That a student who fails after repeating a course shall have no further privileges of instruction or reëxamination in this college, unless by special vote of the faculty.

5. That for the purpose of classification, a student shall be registered in the lowest class in which he is taking work.

6. That a student who at the beginning of the academic year is found to be deficient in two-fifths or more of his work expressed in hours, shall be required to repeat the year, the subjects in which he has received a grade of 4 or 5 constituting his curriculum.

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<sup>1</sup> Grades are recorded by the figures 1 to 5, inclusive.

7. That a student, who at the beginning of the academic year is found to be deficient in less than two-fifths of his work expressed in hours, shall repeat the courses in which he has failed and will be strongly advised to take in addition, not more than two-fifths of the work of the succeeding year.

#### REQUIREMENTS FOR GRADUATION

At the end of his medical studies, a student who has passed all of the required examinations satisfactorily will receive the degree of Doctor of Medicine under the following conditions:

1. He must be twenty-one years of age and of a reputable character.

2. He must have satisfied all the requirements for admission to this college, and completed as a regularly matriculated medical student a five years' course of medical study equivalent in its standards to that given here. The last three years must be spent in this college, unless permission for a different arrangement has been obtained from the faculty.

3. His graduation must then be recommended by the University Council and approved by the Board of Regents.

#### SIXTH OR HOSPITAL YEAR

The hospital year of forty-eight weeks' work is optional except for those physicians who desire to enter the clinical branches of the Government service, in which case thirty-six weeks of satisfactory hospital service is required.

The year's work is divided into 12 units of four weeks' continuous service each, as follows: Ambulance and receiving service, four weeks; medicine, eight weeks; infectious diseases, four weeks; surgery, eight weeks; obstetrics, four weeks; clinical laboratory, four weeks; ophthalmology, otology, laryngology, and rhinology four weeks; pediatrics, four weeks; pathology, four weeks; elective, four weeks.

With the approval of the Director of Health, physicians taking the hospital year will be given intern service in the San Lazaro Hospital.

Physicians who take twenty-four or more weeks of this service will be given certificates showing the work performed.

For a more detailed outline of the instruction, see Schedule of Courses, page 196.

#### MILITARY INSTRUCTION

Every male student entering the University of the Philippines is required to take military drill for two periods per week of one hour each during the first two years of residence unless excused therefrom for physical disability or for other valid

reason. Military drill, therefore, is compulsory for students enrolled in the College of Medicine and Surgery.

The course in military hygiene in the Graduate School of Tropical Medicine and Public Health is elective for fourth and fifth year medical students.

An elective course in military surgery, consisting of seventeen lectures, is offered in the second semester to fourth and fifth year medical students.

#### CURRICULUM.

The curriculum is organized under twelve divisions.

- I. Anatomy (including histology, embryology, and neurology).
- II. Physiology (including physiological chemistry) and Pharmacology.
- III. Pharmacy.
- IV. Pathology (including bacteriology and the city morgue).
- V. Parasitology (including protozoölogy, helminthology, medical entomology, and special medical zoölogy).
- VI. Hygiene (including general hygiene, chemical laboratory and biologic laboratory hygiene).
- VII. Medicine (including clinical medicine, tropical medicine, physical diagnosis, clinical diagnosis, clinical microscopy, dermatology, nervous diseases, mental disease, and applied therapeutics).
- VIII. Legal Medicine (including medical economics and ethics and the history of medicine).
- IX. Pediatrics.
- X. Surgery (including gynecology, orthopedics, and genito-urinary surgery).
- XI. Obstetrics.
- XII. Ophthalmology, Otology, Laryngology, and Rhinology.

#### *Outline of courses in the School of Medicine, College of Medicine and Surgery*

	First year.		Second year.		Third year.		Fourth year.		Fifth year.		Total.	Total for departments.
	First semester.	Second semester.	Third semester.	Fourth semester.	Fifth semester.	Sixth semester.	Seventh semester.	Eighth semester.	Ninth semester.	Tenth semester.		
Chemistry (College of Liberal Arts):	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
3. Qualitative.....			153								153	221
11. Analytical.....			68								68	
Anatomy:												
1. Systematic.....	357	357									714	1, 173
2. Histology.....	153										153	
3. Embryology.....		153									153	
4. Neurology.....			153								153	
5. Topographic.....											153	

*Outline of courses in the School of Medicine, College of Medicine and Surgery—Continued.*

	First year.		Second year.		Third year.		Fourth year.		Fifth year.			
	First semester.	Second semester.	Third semester.	Fourth semester.	Fifth semester.	Sixth semester.	Seventh semester.	Eighth semester.	Ninth semester.	Tenth semester.	Total.	Total for departments.
Hygiene and public health:	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
1. Hygiene and sanitation								51			51	221
2. Communicable diseases									34		34	
3. Laboratory:												
3a. Biological									68		68	
3b. Chemical								68			68	
Legal medicine:												85
1. Legal medicine									34		34	
2. Legal medicine										34	34	
4. Medical economics										17	17	
Parasitology:												199
1a. Protozoölogy						68					68	
2. Helmenthology								68			68	
3. Entomology							51				51	
4. Special medical zoölogy							12				12	
Medicine:												952
1. Physical diagnosis					68	34					102	
2. Clinical diagnosis						68					68	
3. Clinical laboratory						102	68				170	
4. Nervous diseases									34		34	
5. Mental diseases										17	17	
6. Dermatology										34	34	
7. Tropical medicine								17		17	34	
8. Applied therapeutics						17		34	34		85	
9. Library methods					7					10	17	
10. Clinical medicine							51	51	51	51	204	
11. Conference							34	34	34	34	136	
12. Clinic o-pathological conference						(a)	(a)	(a)	(a)	(a)	(a)	
14a. Physical therapy									34		34	
17d. Infectious disease clinics										17	17	
Obstetrics:												153
1. Physiological							51				51	
2. Pathological								51			51	
3. Operative									51		51	
4. Clinic and outpatients												
Ophthalmology, etc:												255
1. Ophthalmology									102		102	
2. Otology, etc										153	153	

<sup>a</sup> Time credited to pathology 4.

*Outline of courses in the School of Medicine, College of Medicine and Surgery—Continued.*

	First year.		Second year.		Third year.		Fourth year.		Fifth year.			
	First semester.	Second semester.	Third semester.	Fourth semester.	Fifth semester.	Sixth semester.	Seventh semester.	Eighth semester.	Ninth semester.	Tenth semester.	Total.	Total for departments.
Pathology:	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
1. Autopsies					a 25	a 25					a 50	
2. General and systemic					255	136					391	
3. Experimental								34			34	
4. Clinico-pathological conference						17	17	17	17	17	85	765
5. Bacteriology				255							255	
Pediatrics:												
1. Hygiene and feeding							34				34	
2. Dispensary							17	17			34	187
3. Clinic							51				51	
4. Conference								68			68	
Pharmacy:												
6a. Medical pharmacy					119						119	119
Physiology:												
1. General				272							272	
2. Physiological chemistry			136	136							272	
4. Experimental pharmacology					170						170	748
5. Pharmacal therapeutics								34			34	
Surgery:												
1. Principles of surgery						51					51	
2. Surgical anatomy						17					17	
3. Surgical pathology						34					34	
4. Dispensary						51					51	
5. Regional surgery						51	51	51			153	
6. Gynecology							51				51	
7. Gynecological dispensary and clinic							51				51	
8. Genito-urinary							51				51	
9. Orthopedic surgery							51				51	
10. Operative on cadaver								14			14	
Operative on animals								20			20	
11. Bedside clinics									51		51	
12. Operative clinics									102	102	204	
13. Practice and conference										51	51	850

<sup>a</sup> Time credited to pathology 2.

### CHEMISTRY

Courses in chemistry, except physiological chemistry, are given by the Department of Chemistry of the College of Liberal Arts.

3. *Qualitative Analysis, Inorganic*.—Lectures, recitations, and laboratory work.

[Second year, first semester; 153 hours. Assistant Professor J. I. DEL ROSARIO.

11. *Quantitative Analysis for Medical Students*.—For medical students.

[Second year, first semester; 68 hours. Assistant Professor J. I. DEL ROSARIO.

[NOTE.—For physiological chemistry see Department of Physiology, page 192.]

## COURSES OF INSTRUCTION

### ANATOMY

Professor RUTH,<sup>1</sup> Chief of Department; Associate Professor GARCIA; Doctors NAÑAGAS, MOLINA,<sup>2</sup> CAÑIZARES and FERNANDEZ.

In the anatomical department five required courses of instruction are provided in the various anatomical sciences extending throughout the entire first year and the first semester of the second year.

The following courses are offered: systematic anatomy, histology, embryology, neurology, and topographical anatomy. The laboratories are well provided with models, charts and atlases which are always available for student use. The embryological laboratory is especially well equipped with models both single and in series, the latter showing successive stages of development that take place in various structures and organs during the early growth of the embryo.

1. *Systematic Anatomy*.—This course also includes the study of osteology which is given during the first three weeks of the first semester. For the course in osteology the student is provided with one half a skeleton.

It is planned to complete the dissection of the entire human body during the first year. For convenience the body is divided into five parts; upper extremities, lower extremities, head and neck, thorax, and abdomen; each student must complete the entire dissection of one half of the body.

[First year, 714 hours.  
Professor RUTH.  
Associate Professor GARCIA.  
Doctor NAÑAGAS.  
Doctor CAÑIZARES.  
Doctor FERNANDEZ.

2. *Histology*.—Lectures, recitations and laboratory work. Both fresh and stained material are used.

[First year, first semester; 153 hours.  
Associate Professor GARCIA.  
Doctor CAÑIZARES.

<sup>1</sup> On leave.

<sup>2</sup> Resigned.

3. *Embryology*.—Lectures, recitations and laboratory work which consists of studying serial cross sections of the developing chick and pig.

[First year, second semester; 153 hours.  
Professor RUTH.  
Associate Professor GARCIA.  
Doctor NAÑAGAS.

4. *Neurology*.—Dissection and microscopical studies of the goat and human brains and of the special sense organs; lectures, recitations and laboratory work.

[First year, second semester; 153 hours.  
Associate Professor GARCIA.  
Doctor NAÑAGAS.

5. *Topographical Anatomy*.—Laboratory work consisting of the study of cross sections of the human body and the relation of the organs to each other and to the external surface of the body. This course is not offered in 1918-19.

#### HYGIENE

Professor LONG, chief of Department; Professor M. V. DEL ROSARIO; Associate Professor S. V. DEL ROSARIO; Doctors ERNST, NORRIS, GÓMES, GABRIEL, DE JESUS, and CONCHA-BRILLANTES; and Mr. WALSH, Mr. BARBER, and Mr. AUSTIN.

In accordance with the fundamental purpose underlying the organization of the College of Medicine and Surgery, and with the adjustment of the laboratory courses, the teaching of preventive medicine receives more attention than is given to it in undergraduate courses of most schools.

1. *Lectures in Hygiene and Sanitation*.—This course comprises all the subjects usually taught, especial attention being given to the study of water, air, food, plumbing, disposal of human wastes, control of the city's water and milk supply, infant mortality, adulteration of foods, and other fundamental principles essential to practically applied hygiene and sanitation.

[Fourth year, second semester; 51 hours. Associate Professor S. V. DEL ROSARIO.

2. *Communicable Diseases*.—A study of the methods of combatting the dangerous communicable disease, especially those of intestinal origin like cholera, dysentery, intestinal parasites, etc.

[Fifth year, first semester; 34 hours. Professor LONG.

3. *Laboratory*.—(3a) *Biological*: This course consists in lectures and practical work in bacteriologic and other biologic technique required to make the student familiar with the practical examination of water, air, milk, food, etc.

[Fifth year, first semester; 68 hours. Doctor CONCHA-BRILLANTES.

(3b) *Chemical*: The course consists in talks and laboratory work in the chemical technique required to enable the student



to become familiar with the practical examination of water, air, milk, foods, etc.

[Fifth year, second semester; 68 hours. Professor M. V. DEL ROSARIO.

### LEGAL MEDICINE

(Legal medicine, medical economics and ethics, history of medicine.)

Professor DE LOS ANGELES, Chief of Department.

Doctor VILLEGAS.

Instruction in the Department of Legal Medicine is planned to combine the correlative educational activities pertaining to medico-legal matters in the Colleges of Medicine and Law, in the School of Pharmacy, and in the Philippine General Hospital. This is to facilitate instruction and investigation for the government as well as the University of the Philippines. It includes the following divisions:

1. *Legal Medicine*.—This course consists of lectures supplemented as far as additional time and accessible material permit by demonstrations and presence at courts trials.

A collection of medico-legal specimens, photographs, casts, lantern slides, etc., illustrative of various branches of legal medicine, is being constantly increased to facilitate instruction.

It aims to cover by theoretical teaching the study of all questions which form the medico-legal expert specialty, according to the program schematically outlined as follows:

(1) Laws and regulations having medical aspect and relative to the practice of medicine, legal responsibilities and duties of the medical man, methods of judicial investigation, procedure in courts of justice, medical evidence—oral and documentary, etc.

(2) Questions concerning the application of every branch of medical knowledge to the requirement of law and the administration of justice as those pertaining to (a) identification of individuals and of cadavers; (b) death in its medico-legal relations; (c) the wounds resulting in homicide, suicide, or accidents; (d) questions relative to pregnancy, abortion, infanticide, legitimacy, superfetation and the accidents of birth; (e) asphyxia; (f) poisoning; (g) impotence, sterility, and sexual outrage; (h) medico-legal psychiatry and criminal responsibility; (i) criminal anthropology, etc.

Textbook: H. C. Chapman, *A Manual of Medical Jurisprudence, Insanity and Toxicology*.

Collateral reading: Thoinot, *Tratado de Medicina Legal*; Witthaus and Becker, *Medical Jurisprudence, Forensic Medicine and Toxicology*; Wharton and Stille's *Medical Jurisprudence*; Wadsworth's *Post Mortem Examination*; Mendel and Kraus, *Psychiatry*.

[Fifth year, first semester; 34 hours. Professor DE LOS ANGELES.

2. *Legal Medicine*—This course is designed to supplement the training of the senior medical students in legal medicine by clinics, conferences, practical laboratory work, autopsies, etc.

For the instruction in this course, the department makes use of its own laboratory besides the additional laboratory spaces and valuable support secured from the laboratories of other departments of the College of Medicine and Surgery. The materials are obtained from the Philippine General Hospital, Insane Asylums, City Morgue, Bilibid Prison, etc. Every facility will be afforded to those medico-legal students of this course who wish to undertake special research work on any branch of the subject.

Instruction in the technique of medico-legal post-mortem examinations is given coincidentally with exercises based on autopsies held in the post-mortem room of the City Morgue under the charge of the Department of Pathology.

Under the supervision of the professor and by special arrangement with the Department of Surgery, Philippine General Hospital, the students of legal medicine serve as clerks to the medico-legal cases.

In connection with the practical teaching of the subject, it becomes an authorized rule that on request of the chief of the Department of Legal Medicine, students may be excused in rotation from other subjects to report interesting medico-legal cases which are accessible only at hours other than are scheduled for the courses in legal medicine.

In addition to the regular laboratory work, each student is required to submit at the end of the course a thesis based either upon his own original investigation or research on any branch of the subject, or else a full digest and critical exposition of the opinions and researches of others on any medico-legal subject selected. These theses must be accompanied by precise references to the technic followed or publications quoted so that due verification may be facilitated, and must be of such a character as to be of credit to the Department of Legal Medicine, if published. In this way it is intended to impress upon the students the methods of investigation and the most important facts in the various divisions of the subject, as well as to place those with special interest along a definite line of inquiry.

Senior medical students are afforded practical insight into the method of judicial investigations on medico-legal cases in

the form of trial practice during the course as may be arranged by the College of Law.

[Fifth year, second semester; 34 hours. Professor DE LOS ANGELES.

3. *Pharmaceutical Jurisprudence and Ethics*.—See page 246.

4. *Medical Economics and Ethics and History of Medicine*.—The instruction is given by lectures delivered once a week, during the second semester to the senior medical students, and it includes: (1) A business course, (2) a course in the medical ethics, (3) a course on organization and (4) a course in the history of medicine.

Collateral reading: Principles of Medical Ethics of The American Medical Association; Cathell, The Physician Himself; Garrison, History of Medicine.

[Fifth year, second semester; 17 hours. Professor DE LOS ANGELES.

7. *Legal Medicine*.—For senior students in the College of Law See page 328.

#### PARASITOLOGY

Professor HAUGHWOUT, Chief of Department; Professor BANKS; Assistant Professor WHARTON; and Dr. LEIVA.

Instruction in parasitology consists in lectures, conferences and quizzes, and laboratory and field work. The undergraduate courses are designed especially to meet the needs of the general practitioner and the clinical laboratory worker, the endeavor being made to apply the more important principles of parasitology to practical medicine. Stress is laid on the most practical and useful methods for identifying the more frequently encountered animal parasites in the clinical laboratory and in general practice. On the other hand, the courses offered for graduate students are more extended in scope and will take up in greater detail, the theoretical and general biological aspects of animal parasitology so as to give the student a foundation for independent investigation. The work of the department is therefore divided into four sections—that required of undergraduate medical students and dental students, that required of graduate medical students in the School of Tropical Medicine and Public Health, research and seminar courses, and those for advanced students in biology, zoölogy, and medicine.

The work for undergraduate students comes under Courses Nos. 1A, 1B, 2, 3, and 4.

The work required of graduate students in the School of Tropical Medicine and Public Health comes under Courses Nos. 4-5, 6A, 8, and 10.

Research courses in which special problems are undertaken by individual students are Nos. 7A, 7B, 9, and 11.

Advanced courses in protozoölogy offered for students in biology, zoölogy, and medicine are numbered 6B and 6C.

1a. *Protozoölogy*.—The course will consist in didactic lectures to illustrate the general morphology of the four groups of protozoa and the general principles governing the life cycles and activities of the parasitic species. There will be weekly written quizzes the papers being reviewed and criticised in conference with the class. In the laboratory both fresh and stained material will be studied and the student will be taught the simpler and more practical methods of studying and staining the organisms, the methods chosen being those best adapted to the usages of the clinical laboratory, and the office of the general practitioner.

[Third year, second semester; 68 hours.  
Professor HAUGHWOUT.  
Dr. LEIVA.

1b. *Dental Protozoölogy*.—Required for third year dental students and elective for special students who desire a foundation for work on the protozoa found in the mouth. The course will consist in a brief general review of the protozoa as a group, followed by an intensive study of protozoa found in the oral cavity such as the entamoebae, spirochaetida, and trichomonas. The students will be made familiar with the methods of studying the organisms and such laboratory technique as will be of use to the dental practitioner. The student will be required to read some of the more recent literature on the mouth protozoa.

The facilities of the Department of Parasitology are open to qualified dental students and graduates who desire to carry on advanced work along these lines. They may be admitted to the laboratory under the customary University regulations.

[Third year, second semester; 24 hours.  
Dr. LEIVA.  
Dr. SANDOVAL.

2. *Helminthology*.—Lectures and laboratory work. The lectures will take up the morphology of the different groups of parasitic worms and the life cycles of typical species. In the laboratory the students will be taught to identify the species which are found in man and the domestic animals, the practical clinical methods of obtaining and identifying the eggs, and the simpler methods of prophylaxis.

[Fourth year, second semester; 68 hours.  
Assistant Professor WHARTON.  
Dr. LEIVA.

3. *Medical Entomology*.—This course will include the study of poisonous insects and arachnids, insects parasitic on man, domestic insects, biting flies, mosquitoes, and pseudoparasites. Lectures will be based on a certain amount of practical laboratory and field work and the demonstration of museum specimens. Attention will be paid to the character, habits, life histories and classification of insects and arachnids and particularly to their role in the transmission of bacterial, protozoal, and helminthal diseases, the production of traumatism and physiological disturbances, and to prophylactic and remedial measures. This course, or its equivalent, is prerequisite to all medical graduate work in protozoölogy, helminthology and entomology.

[Fourth year, first semester; 51 hours. Dr. LEIVA.

4. *Special Medical Zoölogy*.—This course will consist of twelve lectures dealing with nonparasitic animals which are more or less closely related to diseases of man. Special attention will be paid to the identification and recognition of poisonous forms of coelenterata, pisces, amphibia and reptilia; to the nature and effects of animal poisons, and to the treatment of wounds and diseases caused by these animals.

[Fourth year, first semester; 12 hours. Assistant Professor WHARTON.

### MEDICINE

(Clinical medicine, tropical medicine, nervous and mental diseases, dermatology.)

Professor BAUTISTA (Chief of Department) Professors GUERRERO and MERRILL; Associate Professor SISON; Assistant Professors FERNANDEZ and GUTIERREZ; Doctors ERNST, LEYNES, DOMINGO, LANTIN, BANUELOS, ESQUIVEL and OCHOA, and Miss POLK.

Instruction in the Department of Medicine is given during the third, fourth, and fifth years of the medical course. With the large variety and abundance of clinical material now available, didactic lectures are reduced to a minimum as a method of teaching in this department, and instruction is given by ward and dispensary talks, actual bedside work by the students, assigned readings, and conferences for discussion of the cases studied.

Particular attention is devoted to those etiologic and clinical manifestations of diseases which are peculiar to a tropical environment, and to the diagnosis and treatment of those tropical diseases encountered in the Philippine Islands.

Clinics are given daily in the wards of the hospitals. Clinics on the exanthemata and acute infectious diseases in general are held at the Infectious Disease Hospital. Students are required to attend autopsies on cases of patients that have died in the wards.

1. *Physical Diagnosis*.—The course consists in lectures, practical work on healthy persons, and later, practical demonstrations and practical work in the physical signs encountered in the principal diseases.

[Third year; 102 hours.  
Associate Professor SISON.  
Doctor DOMINGO.  
Doctor LEYNES.

2. *Clinical Diagnosis*.—The course consists in practical demonstrations of the manner of preparing and preserving histories and other case records; of the use and the interpretation of the findings of the important instruments of precision and diagnosis used in medicine, and practical clinical diagnostic work with patients in the Free Dispensary and Hospital. Special attention will be given to the interpretation of symptoms common to more than one disease.

[Third year, second semester; 68 hours.  
Associate Professor SISON.  
Doctor LEYNES.

3. *Clinical Laboratory*.—The course consists in practical laboratory instruction with such talks and recitations as are necessary to elucidate the subject. The students are taught the methods and practical diagnostic importance of microscopic examination of feces, urine, sputum, blood, materials from various lesions of the skin, and of fluids obtained by aspiration.

[Third year, second semester; fourth year, first semester; 170 hours. Professor GUERRERO.

4. *Nervous Diseases*.—The course is given in addition to the instruction upon these subjects taught in the general medical courses. It consists in a series of lectures outlining the important nervous diseases with particular reference to those encountered in the tropics.

[Fifth year, first semester; 34 hours.  
Professor GUERRERO.  
Associate Professor SISON.

5. *Mental Diseases*.—The course consists in outline lectures, assigned reading and practical work in the wards of the hospital for the insane at San Lazaro.

[Fifth year, second semester; 17 hours. Doctor ERNST.

6. *Dermatology*.—The course consists in recitations, dispensary talks, and practical experience in the skin disease clinics of the free dispensary.

[Fifth year, second semester; 34 hours. Assistant Professor GUTIERREZ.

7. *Tropical Medicine*.—The course consists in an outline lecture discussion of tropical medicine and a more detailed con-

sideration of some of the important diseases peculiar to warm climates.

[Fourth and fifth years, second semester; 34 hours. Professor GUERRERO.

8. *Applied Therapeutics*.—The course consists in lectures, clinics, and practical work in applied therapeutics. Particular attention is given to the treatment of diseases peculiar to warm climates.

[Third year, second semester; fourth year, second semester; fifth year, first semester; 85 hours.  
Professor BAUTISTA.  
Doctor LEYNES.

9. *Library Methods and Medical Bibliography*.—(a) An introductory course in the use of medical reference books, and other bibliographic tools, with especial emphasis on the use of the Index Medicus; subject bibliography.

(b) A lecture course with assigned reading and problems; preparation of manuscript; medical periodicals; documents and society publications; preparation of a paper with bibliography.

[Third year, first semester; fifth year, second semester; 17 hours. Miss POLK.

10. *Clinical Medicine, Ward Classes, and Recitations*.—The course consists in recitations upon previously assigned subjects, ward talks, and practical demonstrations at the bedside.

[Fourth and fifth years; 204 hours.  
Associate Professor SISON.  
Assistant Professor GUTIERREZ.  
Dotor Domingo.

11. *Medical Conferences*.—At these conferences interesting cases from the medical wards are presented to the classes and the question of etiology, pathology, symptoms, and diagnosis are considered in detail. Students are required to prepare complete records in writing of patients presented at these conferences, and are graded upon the thoroughness with which their work is performed.

[Fourth and fifth years; 136 hours.  
Thursdays, Professor BAUTISTA.  
Saturdays, Professor GUERRERO.

12. *Clinico-pathological Conferences* (see also Pathology 4.)—These conferences are given jointly by the Department of Pathology and all clinical departments, and attendance is required of all fourth and fifth year students, and all students taking graduate courses in the College. Each conference consists in a clinical and pathological review of the autopsies of the week together with a clinical and pathologic discussion of the surgical pathology material for the same time.

[Third year, second semester; fourth and fifth years; 85 hours.

14a. *Physical Therapy*.—A combined lecture and practical

course on the indications and uses of Roentgen rays and electricity in the diagnosis and treatment of disease.

[Fifth year, first semester; 34 hours. Assistant Professor FERNANDEZ.

[NOTE.—Medical Courses 17 *a*, *b*, and *c*, are Graduate-School courses, but are elective for fourth and fifth year students; *d* is required of fifth year students.]

### OBSTETRICS

Professor CALDERON; Professor ROXAS; Assistant Professor ACOSTA-SISON;  
Doctors TOLENTINO, RUSTIA, SILVA, and W. DE LEON.

Instruction is given in both the fourth and fifth years. During the first semester, the fourth year students are given a course in physiological obstetrics embracing the anatomy and physiology of pregnancy, diagnosis of uterine pregnancy, hygiene and management of pregnancy, sepsis in obstetrics, and physiology of puerperium.

During the second semester, the fourth year students take up the course in pathological and operative obstetrics which includes the pathology of pregnancy, labor and the puerperium; abortion and premature labor; occipito-posterior, face, brow, breech, and transverse presentations; prolapse of the cord and legs; anomalies of the bony pelvis, expellant powers and soft passages; placenta previa; ablatio placenta; postpartum hemorrhage; retained and adherent placentae; rupture of the uterus; inversion of the uterus; prolapse of the uterus; puerperal infection. This course includes also operative obstetrics which is given by means of lectures and demonstrations on the manikin.

The fifth year students are given, during the first semester, a course of bedside clinical instruction in operative obstetrics and pathology of pregnancy, labor, and puerperium.

The students are also required to take a course in practical obstetrics in the parturition clinics of the Philippine General Hospital and in the homes of outside patients. The students, divided in small groups, may take this course either during the second semester of the fourth year, or during the first or second semester of the fifth year. The course is of two weeks during which the students examine and study the patients and assist in the delivery of parturients. Each student is to attend the delivery of at least ten parturients in order to receive credit for the work. If at the end of two weeks, the student has not ten cases to his credit, he will be required to take another course to cover the number of cases required.

1. *Physiological Obstetrics*.—Lectures, recitations, and demonstrations.

[Fourth year, first semester; 51 hours. Professor ROXAS.



2. *Pathological and Operative Obstetrics*.—Lectures, recitations, and demonstrations.

[Fourth year, second semester; 51 hours. Professor ROXAS.

3. *Clinical Operative Obstetrics*.—Lectures, recitations, and demonstrations.

[Fifth year, first semester; 51 hours. Professor CALDERON.

4. *Parturition Clinic*.—Given at the Philippine General Hospital and in the homes of outside patients throughout the year.

Assistant Professor ACOSTA-SISON.  
 Doctor TOLENTINO.  
 Doctor RUSTIA.  
 Doctor SILVA.  
 Doctor W. DE LEON.

#### OPHTHALMOLOGY, OTOTOLOGY, LARYNGOLOGY, AND RHINOLOGY

Associate Professor UBALDO, Chief of Department; Assistant Professor VELARDE; Doctors FARRALES and OCHOA.

Ophthalmology, otology, rhinology, and laryngology are grouped in one department. This department gives instruction on those subjects in the fifth year of the medical course.

The large clinical material of the hospital and free dispensary offers exceptional opportunities to select appropriate cases for lectures, demonstrations, and conferences throughout the course. The students thus become thoroughly familiar with the diagnosis and treatments of the common diseases of the eye, ear, nose and throat. Special attention is given to the diagnosis of such diseases as gonorrheal ophthalmia, trachoma, diphtheria, etc. Particular stress is laid on the correction of errors of refraction and the exact manipulation of the different optical apparatus.

It is the main object of the department to produce a sufficient number of trained physicians on scientific refraction so that in the near future the correction of errors of refraction can be entrusted alone to scientifically trained physicians even as general practitioners.

*Ophthalmology*.—The instruction on ophthalmology covers the entire first semester and the early part of the second semester. It consists of didactic lectures, recitations, clinical conferences, operations and refractions. The students are given a very thorough course on refraction. Both didactic lectures combined with recitations and practical work are given. Exact manipulation of the different optical instruments and apparatus used in retinoscopy, perimetry and fundus examination are taught to enable them to diagnose the common intraocular morbid conditions.

In the early part of the second semester a number of after-

noons are devoted to comparative ophthalmoscopy and an operative course on cadavers and phantoms.

*Otology, Rhinology, and Laryngology.*—The course consists in lectures, recitations, conferences, and operations. A series of lectures on the important diseases, particularly those found in the tropics, are given. The different diseases of the accessory sinuses of the nose are discussed during the second semester.

The students are assigned an active part in surgical operations of eye, ear, nose and throat. They are not only allowed to see the operations, but serve as assistants.

1. *General Ophthalmology.*—This part of the course covers the general principles of ophthalmology. It consists of lectures and recitations.

*Refraction.*—A series of lectures and recitations on the general principles of optics and their applications is given. Ophthalmoscopy, retinoscopy, perimetry and ophthalmometry are thoroughly discussed and the students are taught the exact manipulations of their special apparatus and are made familiar with the fundus oculi. The dispensary and the hospital furnish plenty of material so that the students have a general knowledge on this line of work before they graduate.

*Ward Visits and Clinical Conferences.*—The students are taken to the wards and shown the interesting cases. Bedside discussions on diagnosis and treatments are given. Rare and important cases are assigned to students to study and report to the class for discussion.

*Operative Surgery of the Eye.*—This work is given in the special operating pavilion of the eye, ear, nose and throat department of the Philippine General Hospital. The cases are demonstrated and discussed by the students. Special stress is laid on the clinical diagnosis and technic of operation in each individual case. The students are made assistants in rotation.

[Fifth year, first semester; 102 hours.  
Associate Professor UBALDO.  
Assistant Professor VELARDE.  
Doctor FARRALES.  
Doctor OCHA.

2. *Otology, Rhinology, Laryngology, and Accessory Sinuses.*—This part of the course consists in lectures and recitations.

*Dispensary.*—Three hours a week are devoted to the free dispensary clinics. Discussions of etiology, diagnosis and treatment of important cases are usually given. The students are taught the general office treatment of out-patients.

*Operative Surgery on Ear, Nose, and Throat.*—This part of the course is purely practical and is given in the amphi-

theater of the Philippine General Hospital. The technic of the operation in each individual case is discussed.

*Comparative Ophthalmoscopy and Operative course on Cadavers and Phantoms.*—Students make a comparative study of the fundus oculi of different animals. They are allowed to operate on the cadavers and perform such operations as cataract extraction, iridectomy, evisceration, etc.

[Fifth year, second semester; 153 hours.

Associate Professor UBALDO.

Assistant Professor VELARDE.

Doctor FARRALES.

Doctor OCHA.

### **PATHOLOGY AND BACTERIOLOGY**

Professor WADE, Chief of Department; Associate Professor HILARIO; Assistant Professor MENDOZA-GUAZON; Doctor MANALANG.

The department of pathology and bacteriology occupies the lower floor of the east wing of the building of the College of Medicine and Surgery. This contains a large, well-equipped general laboratory for teaching purposes, adjoining which are four smaller rooms. Of these latter, one is occupied by the preparators, two by the teaching staff, and one is prepared for work of the graduate students. The museum occupies another large room of the west wing.

In the museum are 2,000 specimens illustrating the various phases of disease, especially those being collected which demonstrate lesions more frequently encountered in tropical countries. This museum has been enriched by the transfer of the museum of the Bureau of Science which contains many specimens illustrating experimentally produced lesions in laboratory animals and valuable collections of series of cases on which was based much of the pioneer scientific work in the Philippine Islands. This material is well catalogued and is being constantly increased by additions from the operating rooms of the Philippine General Hospital and the autopsy room. Complete records of 6000 autopsies performed in the department are bound in readily accessible form and the catalogue of the clinical material is easily available. The city morgue is in the building of the College of Medicine and Surgery and is administered in coöperation with the professor of pathology. The morgue and autopsy rooms are built on modern lines with facility for the refrigeration of 18 bodies by means of ammonia gas. This being the official city morgue and that of the Philippine General Hospital and all of the autopsies being performed under the direction of the Chief of this Department, a minimum of 500 autopsies annually are performed, providing a wealth of material for

teaching purposes. In addition the autopsies at the morgue of the Hospital for Infectious Diseases at San Lazaro and at the Bilibid Prison hospital are performed by members of this department.

Histologic preparations from the most of this material are in available form.

The obligatory courses in this department extend throughout the second semester of the second year, the entire third year, and second semester of the fourth year in the College of Medicine and Surgery. Elective courses are offered to students of the fourth and fifth years and the weekly clinico-pathologic conferences are open to the students and the medical profession at large. During the fourth and fifth years, students who have seen the clinical aspects of cases dying in the wards of the Philippine General Hospital are frequently enabled to see their pathologic-anatomic aspects.

1. *Autopsies*.—Attendance at autopsies in the city morgue and in the San Lazaro Morgue is obligatory during the third year and optional during the fourth and fifth years in the College of Medicine and Surgery. Students are instructed in the methods of performing autopsies and the proper interpretation and recording of the findings.

Opportunity is offered each student to perform autopsies under the direction of one of the teaching staff, and to make the necessary bacteriologic and histologic examinations.

[Third year; 50 hours. The STAFF.

2. *General and Systemic Pathology*.—The basis of this course is the systematic instruction in pathologic histology. This is abundantly supplemented by demonstrations, autopsies, lectures, and recitations. The pathologic processes as they occur in the various viscera are abundantly demonstrated both grossly and histologically.

[Third year, first and second semester; 391 hours.  
Professor WADE.  
Doctor MENDOZA-GUAZON.

3. *Pathology of Special Diseases*.—This course is designed to give instruction supplementing Course 2.

[Fourth year, second semester; 34 hours. Associate Professor HILARIO.

4. *Clinico-Pathological Conferences*.—The clinical histories of fatal cases from the Philippine General Hospital are presented and discussed by members of the hospital staff and the pathologic lesions of the cases are demonstrated.

[Third year, second semester; fourth and fifth years; 85 hours. The Staff.

5. *Bacteriology*.—Bacteriology is taught by means of lectures, recitations, and laboratory work. In the lectures are considered general bacteriology, infection, and immunity. In the laboratory the important pathogenic bacteria are studied culturally and microscopically and the pathogenic properties of several species are demonstrated by animal inoculation. The diagnosis of various diseases, such as diphtheria, typhoid, cholera, and bacillary dysentery by bacteriologic and serologic methods, is also considered.

[Second year, second semester; 255 hours.

Professor WADE.

Doctor MANALANG.

5a. *Bacteriology*.—See School of Pharmacy, page 229.

### PEDIATRICS

Professor ALBERT, Chief of Department; Assistant Professor GONZALEZ;  
Doctors ARVISÚ, TIRONA, and F. DE LEON.

More than one-half of the total patients seen in the general practice of medicine in the Philippines are children. Furthermore, the excessive infant mortality emphasizes the importance of special knowledge of the diseases of children in this country and justifies the extra time devoted to the subject of pediatrics.

The instruction is based on the fundamental principle that the child is no mere miniature adult, but has its own independent physiology, pathology, and therapeutics.

The courses are arranged to furnish a general survey of the subject through lectures, conferences, recitations and practical work in the dispensary, and in the wards of the Philippine General Hospital. Students are required to attend autopsies of cases of patients that have died in the wards. Clinics on the exanthemata and contagious diseases are held in the Hospital for Infectious Diseases at San Lazaro.

1. *Infant Hygiene and Feeding*.—A conference and recitation course in the anatomy, physiology, hygiene, and dietetics of infancy.

[Fourth year, first semester; 34 hours. Assistant Professor GONZALEZ.

2. *Dispensary*.—By sections.

[Fourth year, 34 hours. Assistant Professor GONZALEZ.

3. *Pediatric Clinic*.—Clinical conferences on the normal and abnormal attributes of children, on the methods of examination and semeiotics.

[Fourth year, first semester; 51 hours. Professor ALBERT.

4. *Clinic and Conference Course*.—The typical disorders of infancy and childhood including scurvy, rickets, convulsive

disorders, so-called gastro-enterities, beriberi, broncho-pneumonia, dermatoses, acute and chronic infections, meningitis, paralysis.

[Fourth year, second semester; 68 hours. Professor ALBERT.

### PHARMACY

Instruction to medical students in materia medica, pharmacy, and prescription writing is given in the School of Pharmacy.

*6a. Materia Medica and Medical Pharmacy.*—An introductory course in materia medica and pharmacy, and in prescription writing for students of medicine. The student will study in the laboratory the tests for the most important classes of drugs and drug preparations, and will be given practice in the preparation of galenicals and the filling of his own prescriptions.

[Third year, first semester; 119 hours.

Associate Professor HOCSON.

Miss VILLANUEVA.

### PHYSIOLOGY AND PHARMACOLOGY

(Physiology, physiological chemistry, pharmacology.)

Professor GIBSON, Chief of Department; Assistant Professors DE LA PAZ and CONCEPCIÓN; Doctors FAUSTINO GARCIA, CUAJUNCO, and GUEVARRA.

These departments are fully equipped with modern apparatus for teaching and research.

1. *General Physiology.*—Lectures and laboratory work in the physiology of the cell; of muscle and nerve; of the circulation of the blood and lymph; of respiration; of the central nervous system and special senses.

[First and second years, second semester; 272 hours.

Professor GIBSON.

Assistant Professor CONCEPCIÓN.

Doctor GUEVARRA.

2. *Physiological Chemistry and the Physiology of Nutrition.*—  
(a) Lectures, recitations and laboratory work in the chemistry of the carbohydrates, fats, and proteins, and the connective tissues.

(b) The chemistry and chemical physiology of muscle and of nervous tissue; of blood and of respiration; of secretion, digestion, and absorption; the ductless glands; the metabolism of fats, carbohydrates, and proteins; animal heat; normal and pathological urines, and the conduction of a metabolism experiment. The 2a course is prerequisite.

[First and second years; 272 hours.

Professor GIBSON.

Assistant Professor CONCEPCIÓN.

Doctor GUEVARRA.

3. *Physiology for Pharmacists.*—See page 249.

4. *Experimental Pharmacology.*—The course aims to furnish a knowledge of the action of drugs sufficient to meet the needs

of the physician. The student has the opportunity to observe the pharmacological phenomena essential to the understanding of scientific therapeutics. He acquires training in making accurate observation, critical analysis and scientific deduction as applied to pharmacological investigation. Before obtaining credit in the course each student is required to submit a report on an assigned pharmacological topic, thus necessitating personal reference to classic and current papers in the physiological and pharmacological journals.

[Third year, first semester; 170 hours.  
Assistant Professor DE LA PAZ.  
Doctor GARCIA.  
Doctor CUAJUNCO.

5. *Pharmaceutical Therapeutics*.—The aim of this course is to recapitulate the practical features of pharmacology and to connect this subject with applied therapeutics by the discussion of the action of the drugs used in a selected list of case histories.

[Fourth year, second semester; 34 hours. Assistant Professor DE LA PAZ.

6. *Pharmacology and Toxicology for Pharmacy Students*.—See page 246.

7. *Advanced Work and Research*.—The course is open to a limited number of qualified students. Advanced work or research problems will be arranged in physiology, physiological chemistry, or pharmacology to suit the individual student.

Professor GIBSON.  
Assistant Professor DE LA PAZ.

### SURGERY

Professor GUAZON, Chief of Department; Associate Professor EDUQUE; Assistant Professors REYES and VAZQUEZ; Doctors SANTOS, MANDANAS, and AFABLE.

The Department of Surgery offers courses of didactic and practical instruction in general surgery, gynecology, orthopedics, and genito-urinary surgery, to third, fourth, and fifth year students.

The Philippine General Hospital, the Free Dispensary, and the Anatomical and Pathological Laboratories of the College of Medicine and Surgery afford excellent opportunity for teaching the clinical and laboratory branches in surgery.

Surgical pathology and surgical anatomy are given in the laboratories of the Medical Building and in the Hospital.

The course in operative surgery on the cadaver is given in the Anatomical Laboratory. The animal work is at Pandacan where there are excellent facilities for carrying out aseptic surgery.

Clinics are run daily by the members of the staff in the

Hospital and Dispensary where the students will find rich material for their practical work.

1. *Principles of Surgery*.—This course covers the subject dealing with the principles of surgery by means of lectures, recitations, and demonstrations.

[Third year, second semester; 51 hours. Assistant Professor REYES.

2. *Surgical Anatomy*.—Lecture course with demonstrations on the cadaver and the living subject.

[Third year, second semester; 17 hours. Doctor SANTOS.

3. *Surgical Pathology*.—A didactic and laboratory course, giving particular attention to the following-out of the pathological material in connection with the clinics.

[Third year, second semester; 34 hours. Doctor SANTOS.

4. *Surgical Dispensary (by sections)*.—A course in surgical diagnosis and practical work in bandaging, dressings, surgical appliances, and minor operations.

[Third year, second semester; 51 hours. Professor GUAZON.

5. *Regional Surgery*.—(a) Lectures, recitations and demonstrations in the diseases of the extremities and thorax.

[Third year, second semester; 51 hours. Assistant Professor VAZQUEZ.

(b) Lectures, recitations and demonstrations on the diseases of the head and neck.

[Fourth year, first semester; 51 hours.  
Assistant Professor REYES.

(c) Lectures, recitations and demonstrations on the affections of the abdomen.

[Fourth year, second semester; 51 hours.  
Professor GUAZON.  
Associate Professor EDUQUE.

6. *Gynecology*.—The course consists in lectures and recitations covering in general the principles and practice of gynecology.

[Fourth year, first semester; 51 hours.  
Professor GUAZON.

7. *Gynecological Dispensary and Clinic (by sections)*.—Demonstration and discussion of cases and practical work in history taking, pelvic examinations, diagnosis, and nonoperative treatment of gynecological conditions.

[Fourth year, first semester; 51 hours. Professor GUAZON.

8. *Genito-Urinary Surgery*.—Lectures, recitations, and practical work in the diagnosis and treatment of the principal diseases of the genito-urinary tract, cystoscopic examinations, and dispensary clinic; by sections.

[Fourth year, first semester; 51 hours. Associate Professor EDUQUE.



9. *Orthopedic Surgery*.—This course includes fractures and dislocations and covers the main affections pertaining to these subjects in the form of didactic and practical instruction.

[Fourth year, first semester; 51 hours. Assistant Professor VAZQUEZ.

10. *Operative Surgery*.—(a) *Operative surgery on the cadaver*: The course consists in the practical demonstration of the principal classical operations.

[Fourth year, second semester; 14 hours.  
Assistant Professor REYES.

(b) *Operative surgery on animals*.—In this course it is aimed to develop a good aseptic technic in addition to familiarity with major operative procedures. The student performing the operation attends to the post-operative care of the animal operated upon. Autopsies are performed on animals that die from operation to determine the exact cause of death.

[Fourth year, second semester; 20 hours. Professor GUAZON.

11. *Bedside Clinics*.—Practical instruction in physical examination, diagnosis, and discussion of preoperative and post-operative treatment of surgical cases at the bedside.

[Fifth year, first semester; 51 hours.  
Professor GUAZON.  
Associate Professor EDUQUE.  
Assistant Professor REYES.

12. *Operative Clinics*.—The cases taken up in these clinics are previously studied in the wards by the students. The diagnosis and surgical treatment of these cases are fully discussed before operating. As far as practicable, the operative technic is shown step by step during the course of operation. Students taking this course not only view operations, but are also allowed to administer anesthetics and assist the surgeon.

[Fifth year; 204 hours. Professor GUAZON.  
Associate Professor EDUQUE.

13. *Surgical Practice and Clinical Conference*.—The students are assigned cases in the wards. They are required to take histories, make examinations and follow the clinical course of the operated cases and make observations on the treatment given to the patients while in the hospital. The cases studied are presented at the conferences and their complete record read before the class for comment and discussion.

[Fifth year, second semester; 51 hours.  
Professor GUAZON.  
Associate Professor EDUQUE.

14. *Experimental Surgery*.—An elective course open to a

limited number of qualified students desiring to do some experimental work in surgery.

[Professor GUAZON.

**22. Military Surgery.**—The course is elective for those students intending to enter the military service.

*Sixth or hospital year (48 weeks optional)*

[Courses arranged by the coöperation of the Director of Health. "Unit" of work, 4 weeks continuous service.]

Departments and courses.	Units.	Weeks.	Remarks.
Ambulance and receiving service.	1	4	Intern service, Philippine General Hospital.
Medicine .....	2	8	Do.
Medicine (infectious diseases) ..	1	4	Intern service in the San Lazaro Hospitals for infectious diseases.
Surgery .....	2	8	Intern service, Philippine General Hospital.
Obstetrics .....	1	4	Do.
Clinical laboratory .....	1	4	Do.
Ophthalmology, otology, laryngology, and rhinology.	1	4	Do.
Pediatrics .....	1	4	Do.
Pathology .....	1	4	Intern service, College of Medicine and Surgery.
Elective .....	1	4	Intern service in the Philippine General Hospital or in infectious disease hospitals.
Total .....	12	48	

1. Thirty-six weeks of this service or a corresponding amount of work in the Graduate School of Tropical Medicine and Public Health is required by the various Bureaus to establish eligibility for the Government service in positions requiring the exercise of clinical knowledge.

No hospital service is required of graduates who wish to enter laboratory departments in the Government service.

2. Candidates for the degrees of Doctor of Tropical Medicine or Doctor of Public Health will be given credit for appropriate work performed in the above service.

3. Physicians who complete 6 or more units (24 or more weeks) of the above service will be given certificates showing the work performed.

No certificate will be given for less than 24 weeks' service.

4. All physicians taking this service are required to attend the weekly meetings of the staff and the clinical and pathological conferences. Those taking intern service are required to subscribe to all the hospital rules and regulations.

*Summary of enrollment of the College of Medicine and Surgery during the academic year 1917-18.*

Fifth year .....	25
Fourth year .....	26
Third year .....	39
Second year .....	43
First year .....	72
Total .....	205

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## SCHOOL OF DENTISTRY



## **Officers of Administration, Faculty and Instructors**

IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

FERNANDO CALDERON, B. A., M. D.,  
Dean of the College of Medicine and Surgery.

LOUIS OTTOFY, D. D. S., M. D.,  
Director of the School of Dentistry and Professor of Dentistry.

DOMICIANO J. SANDOVAL, D. D. S.,  
Instructor in Dentistry.

Philippine General Hospital.

SIMON FRANCISCO TECSON, D. D. S.,  
Lecturer on Dentistry.

Roxas Building, Manila.

(For instruction in Pathology and Bacteriology, Chemistry, Physiology, **Medical Zoology**,  
Anatomy, Pharmacy, Pharmacology, see Faculty, College of Medicine and Surgery).



## THE SCHOOL OF DENTISTRY

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### ADMISSION REQUIREMENTS FOR THE FIRST YEAR CLASS OF THE COLLEGE OF MEDICINE AND SURGERY AS CANDIDATES FOR THE DEGREE OF DOCTOR OF DENTAL SURGERY

Applicants for admission to the College of Medicine and Surgery as candidates for the degree of Doctor of Dental Surgery must fulfill the admission requirements of the College of Medicine and Surgery, except that the completion of the first year only of the pre-medical course or its equivalent is required. However, it is provided that a limited number of students who have satisfied the admission requirements of the College of Liberal Arts, University of the Philippines, may be admitted with the approval of the Faculty of the College of Medicine and Surgery as candidates for the degree of Doctor of Dental Surgery.

### ADMISSION TO ADVANCED STANDING FOR THE DEGREE OF DOCTOR OF DENTAL SURGERY AND AS SPECIAL STUDENTS IN THE DEPARTMENT OF DENTISTRY

Applicants for admission to advanced standing as candidates for the degree of Doctor of Dental Surgery, or as special students in the School of Dentistry not candidates for a degree, may be admitted subject to the provisions of the requirements of the College of Medicine and Surgery.

### FEEES

Laboratory and athletic association fees must be paid by all students enrolled in the School of Dentistry, as provided for students in the College of Medicine and Surgery.

The tuition fee for candidates for the degree of Doctor of Dental Surgery is ₱30 per semester, payable in advance.

### EXAMINATIONS AND CONDITIONS

The same requirements as to examinations and conditions will obtain as already stated for the College of Medicine and Surgery.

### REQUIREMENTS FOR GRADUATION

The degree of Doctor of Dental Surgery will be conferred upon a student, enrolled in the School of Dental Surgery, when he shall have fulfilled the following conditions:

1. He must be 21 years of age and of reputable character.

2. He must have satisfied all the requirements for admission to the College of Medicine and Surgery as provided for candidates for the degree of Doctor of Dental Surgery, and have completed a four-year course of dental study equivalent in its standard to that given in the College of Medicine and Surgery of the University of the Philippines. The last two years of the dental course must be completed as a regularly enrolled student in this institution.

3. His graduation must be recommended by the University Council and approved by the Board of Regents.

*Outline of the studies leading to the degree of Doctor of Dental Surgery*

FIRST YEAR

First semester:	Hours.	Second semester:	Hours.
Anatomy (general).....	119	Anatomy (head and neck).....	255
Anatomy 2 and 3 (histology and embryology).....	255	Chemistry 1 or 2.....	153
Chemistry 1 or 2.....	153	Dental Anatomy.....	68
Dental Anatomy.....	48	Prosthetic Technics.....	102
Total .....	575	Total .....	578

SECOND YEAR

First semester:	Hours.	Second semester:	Hours.
Chemistry 3.....	153	Pathology 5 (bacteriology).....	136
Physiology 3.....	102	Crown and Bridge Technics.....	320
Prosthetic Technique.....	320	Operative Technics.....	119
Total .....	575	Total .....	575

THIRD YEAR

First semester:	Hours.	Second semester:	Hours.
Physiology 4 (pharmacology).....	170	Dental Pathology.....	51
Pathology (general and systematic).....	170	Dental Metallurgy .....	17
Prosthetic Dentistry.....	135	Dental Protozoology.....	24
Operative Dentistry.....	100	Operative Dentistry.....	255
Total .....	575	Prosthetic Dentistry.....	228
		Total .....	575

FOURTH YEAR

First semester:	Hours.	Second semester:	Hours.
Oral Surgery.....	51	Oral Surgery.....	102
Orthodontia .....	68	Orthodontia .....	68
Comparative Dental Anatomy.....	6	Operative and Clinical Dentistry...	355
History, ethics, economics.....	26	Prosthetic Dentistry.....	34
Jurisprudence .....	6	Radiology .....	17
Operative and Clinical Dentistry...	384	Total .....	576
Prosthetic Dentistry.....	34		
Total .....	575		

NOTE.—The figures are the time in hours per semester of 17 weeks.

*Summary of enrollment of the School of Dentistry during the academic year 1917-18.*

Third year .....	6
Second year .....	8
First year .....	8
Total .....	22



GRADUATE SCHOOL OF TROPICAL MEDICINE  
AND PUBLIC HEALTH



## **Officers of Administration**

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IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

FERNANDO CALDERON, B. A., M. D.,  
Dean, College of Medicine and Surgery.

H. WINDSOR WADE, M. D.,  
Director.

### **COMMITTEE**

H. WINDSOR WADE, Professor of Pathology and Bacteriology, Chairman.

JOSÉ ALBERT, Professor of Pediatrics.

ARISTON BAUTISTA, Professor of Medicine.

FRANK GODDARD HAUGHWOUT, Professor of Protozoölogy and Parasitology.

SALVADOR VIVENCIO DEL ROSARIO, Associate Professor of Hygiene.

### **FACULTY**

(Faculty of the College of Medicine and Surgery.)



## **Lecturers**

**JUAN AUSTIN,**  
Lecturer on Vital Statistics.  
Philippine Health Service, Manila.

**EDWARD L. BARBER, B. S.,**  
Lecturer on Sanitary Hygiene.  
Philippine Health Service, Manila.

**E. C. ERNST, M. D.,**  
Lecturer on Maritime Quarantine.  
Lecturer on Dangerous Communicable Diseases.  
U. S. Bureau of Quarantine Service.

San Lazaro Hospital.

**PROCESO GABRIEL, M. D.,**  
Lecturer on Infant Mortality.  
Philippine Health Service, Manila.

**MANUEL GOMEZ, M. D.,**  
Lecturer on Social and Vital Statistics.  
Philippine Health Service, Manila.

**VICENTE DE JESUS, M. D.,**  
Lecturer on the Care of Children of the State and on Tuberculosis.  
Philippine Health Service, Manila.

**MARY POLK, B. A., M. A.,**  
Lecturer on Library Methods.  
Bureau of Science, Manila.

**CLAUDE E. NORRIS, M. D.,**  
Lecturer on Prison Sanitation.  
Chief, Prison Sanitation, Bilibid Prison, Manila.

**MICHAEL J. WALSH,**  
**MAMERTO TIANCO,**  
Lecturers on Sanitary Office Administration.  
Philippine Health Service, Manila.



# GRADUATE SCHOOL OF TROPICAL MEDICINE AND PUBLIC HEALTH

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## INTRODUCTION

The wealth of clinical material and the very satisfactory facilities for the care of the sick that are found in the city of Manila, together with the advantages furnished for both laboratory and clinical instruction, afford unusual opportunities to the student of tropical medicine and public health.

Upon recommendation of the Faculty of the College of Medicine and Surgery, approved by the President of the University, the Board of Regents has authorized graduate courses leading by a year's course to the degree of Doctor of Tropical Medicine, and by a two years' course to the degree of Doctor of Public Health.

The close coöperation between the University of the Philippines, the Philippine Health Service, the Philippine General Hospital and other large hospitals of the city of Manila, and the Bureau of Science with its staff of research workers, makes it possible to offer courses in graduate work under conditions hardly excelled elsewhere. The Philippine General Hospital, for instance, including its free dispensary department, cares for some six or seven hundred sick people a day, while the hospital for infectious diseases, with a capacity of 250 beds, furnishes additional valuable material. In addition, the system of Government dispensaries established throughout the Philippine Islands serves as a constant source of supply to the Manila hospitals which are thus furnished with a much larger variety of patients than otherwise could be obtained. The patients are drawn from every part of the Philippine Archipelago, and in addition many of them come from other neighboring tropical countries. The monthly morbidity reports from the Philippine General Hospital are indices to the principal diseases found in the Tropics. The command over pathological material is more complete than is found in most countries and the unusual clinical opportunities are coördinated with those of the pathological departments of the University of the Philippines, and of the biological laboratories of the Bureau of Science.

Sanitary organization and its practical application has reached as high a degree of development in the Philippine Islands as anywhere else in the world. The success which has attended the application of hygienic and sanitary measures has fully justified the plans under which it was achieved, and the laws by which it was brought about are, therefore, of great interest. The sanitary code for the city of Manila is one of the few ordinances in existence which covers the whole field of municipal hygiene and sanitation. The course in public health will offer innumerable opportunities to observe the actual workings of this law.

On account of Manila's close proximity to the great infected centers of the Orient, there are unexcelled opportunities for studying maritime quarantine methods and witnessing their application. The large Mariveles quarantine station has treated more infected vessels in recent years than any other similar station in the world. The questions concerning better water supply for the tropics, with a view to their solution, have received a vast amount of attention, and laboratory studies are constantly in progress. On account of the rapid development of the Islands, occasions are frequently afforded for observing the installation of the different kinds of water systems and noting their effect upon public health.

There is ample opportunity to become familiar with the laboratory examinations connected with the analysis of foods and drugs, in connection with the enforcement of the Food and Drug Act. The new developments in public-health work are constantly being applied in the Philippines on a large scale, so that the testing of the new theories of sanitary science by practical application may be constantly witnessed and their value determined.

From the foregoing it is evident that the graduate course outlined offers opportunities of the very highest order which should demand interest and secure students from universities not so fortunately situated.

#### ADMISSION REQUIREMENTS

In order to be admitted as a regular student in the Graduate School of Tropical Medicine and Public Health, the student shall be a graduate in medicine from a medical college or school which has recognition from the Government of the Philippine Islands and which meets all requirements imposed by the Secretary of Public Instruction and the Central Committee on Standardization of Technical Schools.



Candidates shall have received their degrees during the period when their school was operating under government recognition.

All students shall file application blanks for matriculation to the school with the Secretary of the College of Medicine and Surgery.

#### REGISTRATION

The courses of instruction are given throughout the year and students may register at the beginning of any course.

Students shall register with the secretary of the college before beginning each course, and present their registration certificates to the Professor before being allowed to take the course.

Students shall be admitted to a course only at its commencement.

#### EXAMINATIONS

Examinations will be held upon the completion of each subject, and at such other times as the teacher in charge of a course may elect. In order to be graduated, a student must have passed all subjects required in the course and his graduation must then be recommended by the University Council and approved by the Board of Regents.

For credit in any course eighty per cent of the assigned periods shall be attended and the work completed satisfactorily to the chief of the department.

Courses shall be completed within the time assigned for the course, not partly taken in one year and completed in the next.

#### SPECIAL STUDENTS

Physicians desiring to take any of the special courses outlined in this announcement, may be admitted at the beginning of any course, upon vote of the faculty of the College of Medicine and Surgery. Such courses do not lead to a degree.

A university certificate of attendance will be given those special students who have completed in a satisfactory manner twenty-four or more weeks of graduate instruction.

#### FEEES

A fee of ₦10 will be charged the student in each laboratory course, payable at time of registration. Students are not required to pay a fee for instruction.

#### DEGREES

Students who complete the one year's prescribed courses, pass all required examinations, and submit a satisfactory thesis, will be granted the degree of Doctor of Tropical Medicine (D. T. M.).

Students who complete the full two years' course of study, pass all examinations and submit a satisfactory thesis on some research subject will be granted the degree of Doctor of Public Health (D. P. H.).

#### THESES

The theses must be on subjects approved by the chief of department of the subject selected, and the work on which the theses are based shall be carried on under the supervision of such chief of department or such of his assistants as shall be especially delegated for the purpose. Theses may be based wholly or partly upon: (a) An original investigation or the reinvestigation of published work, (b) The construction of original models and preparations; the designing or construction of new appliances or apparatus; or the description and application of new and improved technical methods, (c) The compilation and analysis of a series of cases or observations. Final approval of the theses shall be obtained from the committee on the Graduate School of Tropical Medicine and Public Health after the recommendation of the chief of department. Theses shall be submitted not less than one month before the day set for the granting of degrees. Further conditions surrounding the form in which theses shall be submitted may be obtained from the Director of the Graduate School. Students are advised to select the subjects of their theses as early in the course as possible.

All theses shall be presented to the professor in charge for his approval at least two weeks before the time set for their delivery to the Director of the Graduate School. This is in order that necessary changes and modifications may be carried out before the expiration of the time in which they may be submitted for final approval. It is understood that when theses are finally presented to the Director they are complete and in finished form. The Director and Committee of the Graduate School reserve the right to reject all theses which are not presented in accordance with the specifications hereinafter set forth.

Theses shall be typewritten on durable paper (coupon bond, or paper of similar quality)  $10\frac{1}{2}$  by 8 inches in size. The writing shall be triple or double-spaced. No matter shall be written single-spaced. The style shall conform to that set forth on the style sheet of the Philippine Journal of Science, which may be inspected in the office of the Director of the school. The bibliography may appear as footnotes, but preferably it should

be assembled at the end of the theses as a bibliography or references, alphabetically arranged, and numbered to agree with the text. All references must be carefully checked and shall give the full name of the author, title of the reference year, volume number, page.

The title page shall bear the name of the author; the full title of the thesis, the date and the following legend:

"Submitted in partial fulfillment of the requirements for the degree of ..... Graduate School of Tropical Medicine and Public Health, College of Medicine and Surgery, University of the Philippines." There shall also be appended to the thesis, a statement of the place and date of birth of the author, the educational institutions which he has attended, and a list of the degrees and honors conferred upon him, as well as the titles of his previous publications.

#### CURRICULUM

The curriculum is divided into departments of instruction, corresponding in organization and personnel to the organization of the undergraduate school.

The extensive outline and thorough courses of instruction given in this school are made possible by coöperation of the Director of Health and the Director of the Bureau of Science, with the approval of the chairman of the committee on the College of Medicine and Surgery of the Board of Regents of the University. Especial attention will be given to the training of graduate students for entrance to the Philippine Health Service.

#### COURSES OF INSTRUCTION

##### HYGIENE AND PUBLIC HEALTH

The courses given in this department consist in lectures, practical laboratory work, and public health station work. A limited number of students will be given hospital intern service while gaining experience in the "clinical" subjects of the course.

4. *The Care of the Aged and Infirm, Mentally Deficient and other "Children of the State."*—Five lectures. The course consists in a general discussion of this important problem from a public health standpoint, with special reference to the tropical aspects of the subject.

[5 hours. Doctor DE JESUS.

5. *Quarantine.*—The course consists in lectures and practical work in quarantine, two hours daily for four weeks. Particular attention will be paid to special problems of maritime quarantine

in the tropics. This course may be supplemented by Hygiene 22, an elective course giving a wider range and more practical experience.

[48 hours. Doctor ERNST.

7. *Tuberculosis*.—Five lectures. The subject is dealt with from the standpoint of the public-health official.

[5 hours. Doctor DE JESUS.

8. *Infant Mortality*.—Five lectures. The course consists in a general outline of the causes of and remedies for infant mortality, special attention being given to the phases of the subject peculiar to the tropics.

[5 hours. Doctor GABRIEL.

9. *Disinfection and Disinfectants*.—A combined lecture, laboratory, and practical course. Two hours daily for four weeks. In this course particular attention is given to the indications for special disinfectants and the influence of special environment upon the action of different disinfectants.

[48 hours. ————.

10. *Laboratory Hygiene*.—The course is given in two sections, chemical and biological.

(a) *Chemical Course*.—The course consists in lectures and laboratory work dealing with the subject of the examination of food and drugs, air, water, and toxicological examinations. The course is given three hours daily for four weeks.

[72 hours. Professor M. V. DEL ROSARIO.

(10b) *Biological Course*.—This course consists in lectures and laboratory work in the examination of milk, water, foods, and the various diagnostic methods connected with public health work. The course is given three hours daily for four weeks.

[72 hours. Doctor CONCHA-BRILLANTES.

12. *Military Hygiene*.—Ten lectures on military hygiene in the Tropics.

[10 hours. ————.

13. *Prison Sanitation*.—The course consists in five lectures on Prison Sanitation and Prison Hospital Administration in the Tropics. The valuable experiences of sanitation in Bilibid will be used in these lectures. The course may be supplemented by Hygiene 24 which gives a larger practical experience in prison hospital work.

[5 hours. Doctor NORRIS.

14. *Public Health Problems in the Tropics*.—The course consists in ten lectures on the principal problems connected with public health work in the Tropics.

[10 hours. Professor LONG.

15. *Sanitary Hygiene and Structural Sanitation*.—A combined lecture and practical course in Sanitary Engineering in the Tropics, including building construction, rat-proofing, plumbing, and disposal of sewage and wastes. Two lectures a week for eight weeks.

[16 hours. Mr. BARBER.

16. *Sanitary Office Administration*.—A combined lecture and practical course including the study of records, indexes, filing official correspondence, etc.; two hours daily for four weeks.

[48 hours. Mr. WALSH.  
Mr. TIANCO.

17. *Social and Vital Statistics*.—Combined lecture and practical course on the legal phases and methods of preparing social and vital statistics, three hours four times a week for four weeks. The course is given in the Vital Statistics Division, Bureau of Health.

[48 hours.  
Doctor MANUEL GOMEZ.  
Mr. AUSTIN.

19. *Health Station Work*.—The course includes inspection and management of pumping stations, slaughterhouses, control of meat, milk and water supply, inspection of markets, laundries, tobacco factories, barber shops, public institutions and public conveyances; three hours daily for twenty-four weeks.

[432 hours. Associate Professor S. V. DEL ROSARIO.

22. *Quarantine*.—Elective course of practical instruction in quarantine methods. The student will have practical work in boarding and inspection of vessels and practical experience at the Mariveles quarantine station.

24. *Prison Sanitation and Prison Hospital Administration*.—An elective course of practical work in Bilibid Prison Hospital with intern or extern service may be arranged for a limited number of students. The course is under the direction of Dr. C. E. Norris, chief medical officer of the prison.

#### LEGAL MEDICINE

*Legal Medicine 5. Advanced Course in Legal Medicine*.—It consists of a course of ten lectures designed for those who are candidates for the degrees of Doctor of Tropical Medicine and Doctor of Public Health and is elective for special graduate students. It deals with topics related especially to the practical application of legal medicine and its allied subjects such as are chiefly regulated by administrative rules and legislation. (See page 181.)

[10 hours. Professor DE LOS ANGELES.

*Legal Medicine 6. Advanced Course in Medical Economics and Ethics.*—It consists of five lectures given to the candidates for the degrees of Doctor of Tropical Medicine and Doctor of Public Health, and is elective for special graduate students. It covers special topics regarding economics and ethical matters of a medical nature, related particularly to existing conditions in the Philippines. (See page 181.)

[5 hours. Professor DE LOS ANGELES.

#### PARASITOLOGY

4-5 *Special Medical Zoölogy.*—The lectures in this course will be given with Special Medical Zoölogy 4. In addition to the twelve lectures of Course 4, students in this course will be given supplementary reading on poisonous animals and their poisons, and laboratory work on forms referred to in the lectures.

[24 hours. Assistant Professor WHARTON.

6A. *Advanced Course in Protozoölogy.*—This course is required of candidates for the degrees of Doctor of Tropical Medicine and Doctor of Public Health and is elective for special students. The course consists in a systematic review of the Protozoa, particular emphasis being laid on the parasitic forms infesting man. The work will be taken up on the comparative basis and will deal, therefore, with species parasitic in the lower animals, plants, and free-living forms, as well as those infesting man. There will be a discussion of the development of parasitic species and of the doctrine of the evolution of disease. The classroom work will consist of didactic lectures bearing on morphology, physiology, cytology, parasitology and taxonomy. These lectures will be followed by seminars in which the students will report on and review assigned literature. In the laboratory the principal technical methods will be worked out and there will be detailed study of fresh and stained material illustrating the points brought out in the lectures and seminars. Each student will be given a simple problem on which he must report before the termination of the course. A reading knowledge of French and German and an ability to make accurate drawings are highly desirable in this course. The course must be preceded by Courses 1A and 3, or their equivalent.

[102 hours. Professor HAUGHWOUT.

6B. *Biologic Aspects of Protozoölogy.*—A general treatment of the Protozoa apart from a special consideration of the parasitic

species. The course will include a discussion of topics having a broad general relation to the medical sciences such as the problems of senescence, fertilization, growth, regeneration and heredity as seen from the standpoint of the protozoölogist. There will be an exposition of the application of experimental methods with the Protozoa, to physiology, pharmacology and therapeutics, and pathology. Lectures and demonstrations. An elective course for graduates students and qualified special students. Previous work in biology and protozoölogy is desirable but not essential. The course will not be offered unless at least five students register for it.

[34 hours. Professor HAUGHWOUT.

6C. *General Protozoölogy*.—This course is given for third year students enrolled in the four-year course in biology in the College of Liberal Arts. Elective for students of adequate preparation. It consists in a systematic review of the Protozoa from the standpoint of taxonomy, morphology, physiology and cytology. Especial attention is paid to the problems of growth and development and the phenomena attending syngamy, with a view to their correlation with similar processes occurring in the metazoa. General experimental methods will be discussed in detail, the course being conducted with a view to the needs of the zoölogist and general biologist. The simpler technical methods will be taught in the laboratory. Each student will be required to collect, describe, and classify at least forty species of protozoa. Students desiring to undertake a simple problem will be given one on application to the instructor.

[Third year, second semester, 102 hours. Professor HAUGHWOUT.

7A. *Research Course in Protozoölogy*.—An elective course for graduate students and qualified special students who may desire either to work out some protozoal problem in relation to other work, or to specialize in protozoölogy. The student will be required to attack a definite problem, with a view to the publication of his results. This problem will be subject to the approval of the instructor. The paper shall include a bibliography of the literature cited and shall be presented in the form prescribed by the Director and Committee of the Graduate School of Tropical Medicine and Public Health. A reading knowledge of French and German is desirable. No student will be admitted to this course who has not passed either Course 6A, or Course 6C, or their equivalent.

Professor HAUGHWOUT.

7B. *Experimental Protozoölogy*.—An elective course especially designed to meet the needs of those who have registered for Courses 6A, 6C, or 7A, with which it may be paralleled. The course will consist in a review of the technical methods employed in the study of the Protozoa, and the principles underlying these methods, together with a general outline of the methods used in protozoal research and experimentation. There will be no lectures, but the work will be carried out under the constant supervision of the instructor, at hours to be arranged with the individual student. The student will be assigned reading and a definite course of laboratory work. The course will be offered in both semesters.

Professor HAUGHWOUT.

8. *Advanced Course in Helminthology*.—Required of candidates for the degrees of Doctor of Tropical Medicine and Doctor of Public Health; elective for special students. The course consists in a systematic review of the parasitic worms, particular emphasis being laid on the forms infesting man and the domestic animals. Required work will consist of lectures, laboratory work and prescribed reading. In the lectures stress is laid on the morphology of the worms, their life history, and methods of prophylaxis. Laboratory work deals chiefly with the collection, preservation, staining, mounting and identification of parasitic worms and their eggs. The student is required to collect and identify twenty species of parasitic worms or their eggs. These preparations are turned in to the instructor as a part of the required work of the course. The required reading includes a review of some of the important literature on the parasitic worms. The course must be preceded by Course 2, or its equivalent.

[102 hours. Assistant Professor WHARTON.

9. *Research Course in Helminthology*.—An elective course for graduate students and qualified special students who desire to specialize in the subject of helminthology. The student is required to attack a definite problem, subject to approval by the instructor and with a view to the publication of his results. The report shall include a bibliography of the literature cited. A reading knowledge of French and German is desirable. This course must be preceded by Course 8, or its equivalent.

[Assistant Professor WHARTON.

10. *Advanced Course in Medical Entomology*.—Required of Candidates for the degrees of Doctor of Tropical Medicine and



Doctor of Public Health. Elective for special students. This course is an amplification of Medical Entomology 3, and presupposes a thorough knowledge of the elements of this subject with special reference to anatomy, physiology and general bionomics of insects. It consists of a detailed review of structure, habits, and biology of common types and a specific study of Philippine insects known to be disease carriers or suspected of being capable of disease transmission. Similar insects of other parts of the world are studied in their taxonomic relations to Philippine forms. Field excursions in connection with local sanitary problems such as fly, mosquito, and flea breeding are made at suitable periods. The work is divided into lectures, laboratory work, field exercises, and reference reading. Particular stress is laid on comparative anatomy, development, phylogeny, and a general review of embryology. Students are required to rear a certain number of species of insects related to disease bearing. Written reviews and discussions of entomologic literature are required, as is a certain number of permanent museum specimens. A reading knowledge of French and German and an ability to make accurate drawings are highly desirable in this course.

[102 hours. Professor BANKS.

11. *Research Course in Medical Entomology*.—An elective course for graduate students who desire to specialize in entomology. Such students will be assigned a specific problem in anatomy, physiology, or biology of particular insects or of members of a group of related forms either with the end in view of gaining an exhaustive knowledge of a given life history or of working out the taxonomic relations of our economic insect fauna, as related to medicine and sanitation. It is obvious that the results of such work must be in finished written condition in compliance with the form prescribed by the Director and Committee of the Graduate School of Tropical Medicine and Public Health, with the idea of their publication either in contributory or monographic form. Papers of this character usually require accurate illustration. A knowledge of French and German is essential in this course as the bibliography on a given subject is part of the required work.

Professor BANKS.

#### MEDICINE

The course given in the department of medicine consists in lectures and practical instruction in the wards of the Philippine General Hospital, in the free dispensary and in the Hospital for

Infectious Diseases at San Lazaro. The Hospital does not accept interns who are not at the same time students in the Graduate School. All graduate clinics are open to the fourth and fifth year classes of the School at all times.

13. *Medical Botany*.—The course consists in 12 lectures covering the following subjects: Water supplies from a botanical standpoint, and methods of treating reservoir waters contaminated with organisms which cause bad odors and tastes; poisonous plants, including contact poisons, plants yielding poisonous alkaloids, those used for criminal purposes in the Philippine Islands, plants which may be eaten when mistaken for foods, arrow poisons, etc.; parasitic fungi as the cause of disease, with notes on the classification and identification of these; Philippine medicinal plants in general.

[12 hours. Professor MERRILL.

14. *Physical Therapy*.—Elective course. A combined lecture and practical course on the indications and uses of Roentgen rays, electricity, baths and other mechanical devices and exercise in the diagnosis and treatment of disease.

Assistant Professor FERNANDEZ.

15. *Communicable Diseases*.—Five lectures on the study of the most important communicable diseases of man in the tropics.

[5 hours. Professor GUERRERO.

17. *Medical Clinics*.—Clinics are conducted in the medical wards of the hospitals throughout the year as follows:

(a) Once a week.

Professor BAUTISTA.

(b) Twice a week.

Professor GUERRERO.

(c) Twice a week.

Associate Professor SISON.

(d) Once a week, at the Hospital for Infectious Diseases at San Lazaro.

Doctor ERNST.

Candidates for the degree of Doctor of Tropical Medicine are required to attend these clinics for three months. A limited number of students may be given intern service in the Philippine General Hospital, the Hospital for Infectious Diseases at San Lazaro, and the Bilibid Prison Hospital during these courses of instruction.

19. *Tropical Therapeutics*.—Lecture course on the therapeutics of important tropical diseases and upon special therapeutic indications peculiar to the tropics. The course will include prac-

tical application of remedies to disease in the wards of the hospitals.

[7 hours. Professor BAUTISTA.

20. *Tropical Etiology*.—An outline lecture course on the principal etiological agents of disease in the tropics.

[5 hours. Associate Professor SISON.

22. *Life Insurance Medicine*.—A lecture and practical demonstration course in examinations for life insurance.

[5 hours. ————.

23. *Research Medicine*.—Elective course. Selected students will be given opportunities and facilities for carrying on approved research in problems in medicine. Subjects will be selected and the work supervised and counsel given to the worker.

Professor BAUTISTA.

### OBSTETRICS

The courses given in this department consist in lectures, clinics, operative obstetrics, and ward visits in the obstetrical wards of the hospital. The department operates a large out-patient service and students may have as much experience as they desire. A certain number of students will be given hospital intern service during their course.

5. *Obstetrical Problems in the Tropics*.—A lecture course covering the most important problems in tropical obstetrics, particularly among native inhabitants of the country.

[3 hours. Professor CALDERON.

6. *Obstetrical Clinics*.—Clinics and ward visits in the wards of the hospital and clinics in the out-patient service continue throughout the year as follows:

(a) Daily at 10.30 a. m. in the maternity wards of the hospital.

Professor CALDERON.

(b) On Mondays, Wednesday, and Fridays at 7.30 a. m., in the maternity wards of the hospital.

Professor ROXAS.

(c) *Out-patient Clinic*.—Calls for service in the out-patient department are being received at all hours and the student has ample practical experience under the trying conditions usually encountered in such service. The clinics in this service are under the direction of

Professor ROXAS.

Assistant Professor ACOSTA-SISON.

Doctor TOLENTINO.

7. *Research Obstetrics*.—Opportunities for advanced work and research in obstetrics are excellent and the unsolved problems numerous. Students will be given facilities and encouraged to take up the investigations of problems, and every facility at the command of the department will be placed at the disposition of serious students.

#### OPHTHALMOLOGY, OTOTOLOGY, RHINOLOGY, AND LARYNGOLOGY

The department offers a course of instruction to graduates as well as to physicians who desire to specialize in refraction. The course consists in lectures, clinics and practical work in the wards of the hospital and free dispensary. A limited number of students will be given intern service in the hospital during the period of instruction.

6. *Problems in Diseases of the Eye, Ear, Nose and Throat in the Tropics*.—The course consists in lectures in which tropical peculiarities and special diseases are discussed.

[5 hours. Associate Professor UBALDO.

7. *Refraction and Ophthalmoscopy*.—A practical course consisting in ophthalmoscopy, retinoscopy and refraction. This course is given three hours a week.

[24 hours. Doctor VELARDE.

8. *Clinics*.—Clinics are held in the wards, operating rooms, office, and free dispensary as follows:

(a) *Operative Clinics*.—This course is given every day at 10.30 a. m. in the special operating pavilion of the Hospital.

Associate Professor UBALDO.  
Doctor VELARDE.

(b) *Dispensary Clinics*.—This is given in the free dispensary: 7.30 to 10.30 a. m. daily; 2 to 3 p. m. Monday, Wednesday, Friday.

Doctor VELARDE.

9. *Research*.—The Department contains a wealth of material which should be investigated and facilities for work will be given serious students.

10. *Physical Examination*.—This course is required of candidates for the degree of Doctor of Public Health. It consists in instruction in the tests of vision, including the color vision test, of hearing and examination of the upper respiratory tract, including septum and turbinates and adenoids, and of the mouth including tonsils, and teeth.

[3 hours a week for 3 weeks. 9 hours.  
Associate Professor UBALDO.  
Doctor VELARDE.

## PATHOLOGY AND BACTERIOLOGY

Courses in the Department of Pathology and Bacteriology consist in lectures and practical laboratory work.

Courses 6, 7, 8, 10, are required of candidates for the degree of Doctor of Tropical Medicine and are elective for special students. Courses 6, 7, 8, 9, 10, are required of candidates for the degree of Doctor of Public Health.

6. *Lecture Course in Tropical Pathology.*—Five lectures in problems of tropical pathology. In this course of lectures the most important problems of current interest are discussed, with particular reference to the state of our present knowledge and the indications of lines of research. A summary is also presented of such tropical diseases as are not completely covered in the laboratory course, such as undulant fever, yellow fever, pellagra, trypanosomiasis, and kala-azar.

[5 hours. Professor WADE.

7. *Laboratory Course in Tropical Pathology.*—This course comprises practical work in the laboratories of pathology including autopsies in the city morgue and the morgue of the hospital for infectious diseases. The diseases to which especial attention is paid in this course are typhoid fever, tuberculosis, Asiatic cholera, amoebiasis, bacillary dysentery, balantidial dysentery, sprue, paragonomiasis, oesophagostomiasis, clonorchiosis and opisthorchiosis, schistosomiasis, ancylostomiasis, ascariasis, tricocephaliasis, filariasis and elephantiasis, kala-azar and oriental sore, mycetoma, granuloma pudendi, malaria, bubonic plague, pneumonic plague, beriberi, syphilis, yaws, leprosy, yellow fever, pellagra, undulant fever, and trypanosomiasis. These diseases are studied by means of reference to the literature, by the study of reports of autopsies performed in this department, with a study of the material preserved in the museum and microscopic sections prepared from these cases, all of which is done under the direct supervision of the chief of the Department. During this course it is possible to see and perform autopsies of cases exemplifying a rather large number of the diseases studied. Two hours daily for twelve weeks.

[144 hours. Professor WADE.

8. *Laboratory work in Tropical Bacteriology.*—The course consists in practical work in bacteriology in the laboratories of the department, in which the microorganisms which are of especial importance in tropical diseases are studied by the usual laboratory methods. One hour daily for twelve weeks.

[36 hours. Professor WADE.

9. *Immunity*.—A combined lecture and laboratory course in immunity, including the manufacture and uses of the various sera, antitoxins and vaccines. Four hours three times a week for twelve weeks.

[144 hours. Doctor MANALANG.

10. *Clinical Laboratory*.—A combined lecture and practical course in the clinical laboratories of the college and hospital. Practical work is given in the routine examination of feces, urine, blood and other secretions and excretions, including the Wassermann reaction and all other work usually performed in clinical diagnostic laboratories. Three hours daily for six weeks.

[108 hours. Doctor MANALANG.

### PEDIATRICS

The subject of pediatrics is considered to be one of the most important in tropical medicine. The courses given to graduates in this department consist in lectures, clinics and practical work in the wards and free dispensary of the hospital and social service with the "Liga Nacional." A limited number of students will be given hospital intern service during their course.

5. *Pediatric Problems in the Tropics*.—A lecture course covering the most important questions concerning diseases of children and child welfare in the tropics.

[5 hours. Professor ALBERT.

6. *Infant Feeding*.—A combined practical and lecture course on the feeding of infants.

[4 hours. Doctor GONZALEZ.

7. *Pediatric Clinics*.—Daily in the wards of the hospital at 9.30 a. m.

Professor ALBERT.

8. *Research in Pediatrics*.—There are exceptional opportunities for investigation in diseases of children in the department's service and students will be given every opportunity to carry on serious work.

Professor ALBERT.

### SURGERY

The courses given in this department consist in lectures, clinics, operative surgery on the cadaver, animal surgery, and surgical pathology. A limited number of students may have intern service in hospitals during their course and all hospitals and free dispensary clinics are open to students of the school.

15. *Surgical Problems in the Tropics*.—A lecture course on the principal surgical conditions peculiar to warm countries.

[5 hours. Professor GUAZON.

16. *Tropical Surgical Pathology*.—A combined lecture and practical course on the most important and peculiarly tropical problems in surgical pathology.

[5 hours. Professor GUAZON.

17. *Surgical Technique in the Tropics (elective)*.—A lecture course on the problems of asepsis, operating technique, and after treatment of operative surgery.

[5 hours. Associate Professor EDUQUE.

18. *Surgical Clinics*.—Clinics are conducted in the operating pavilions and surgical wards of the hospital throughout the year as follows:

(a) On Mondays, Wednesdays, and Fridays at 8.30 a. m., operative surgery and bedside clinics.

Professor GUAZON.

(b) On Tuesdays and Thursdays at 8.30 a. m., operative surgery and bedside clinics.

Assistant Professor REYES.  
Doctor SANTOS.

(c) On Saturdays at 8.30 a. m., operative surgery and bedside clinics.

Associate Professor EDUQUE.  
Doctor VAZQUEZ.

19. *Operative Surgery on the Cadaver*.—An elective practical course in operative surgery.

Assistant Professor REYES.

20. *Animal Surgery*.—An elective course in animal surgery conducted at the animal hospital in Pandacan.

Professor GUAZON.

21. *Research Surgery*.—Advanced students desiring special research work in the problems of surgery will be given proper facilities for work and assistance, supervision, and advice.

Professor GUAZON.

22. *Surgery. Military Surgery*.—This course consists of a course of lectures with demonstrations of cases, designed especially for preparatory training for military surgeons. Elective for candidates for the Degree of Tropical Medicine.

[17 hours. Professor GUAZON.

#### ANATOMY, PHYSIOLOGY, AND PHARMACY

Students may elect advanced courses in these departments. Special students for advanced work and research are received at any time.

*Graduate School of Tropical Medicine and Public Health*

SCHEDULE OF COURSES

[The figures represent hours of required work for the degree mentioned and the (\*) represents elective courses]

Department and courses.	D. T. M.	D. P. H.	Remarks.
<i>Hygiene and public health</i>	<i>Hours.</i>	<i>Hours.</i>	
4 -----	(*)	5	Lecture course, care of "Children of the State."
5 -----	(*)	48	Combined lecture and practical course in quarantine methods.
7 -----	(*)	5	Lecture course in tuberculosis.
8 -----	(*)	5	Lecture course in infant mortality.
9 -----	(*)	48	Combined lecture and laboratory course in disinfectants and disinfection.
10 -----			Laboratory hygiene.
a -----	(*)	72	Chemical course: Combined lecture and laboratory course in chemical examination of food and drugs, air, water, etc.
b -----	(*)	72	Biological course: Combined lecture and laboratory course in bacteriological examination of food and drugs, air water, etc.
12 -----	10	10	Lecture course in military hygiene in the Tropics.
13 -----	(*)	5	Lecture course in prison sanitation in the Tropics.
14 -----	10	(*)	Lecture course in public health problems in the Tropics.
15 -----	(*)	16	Combined lecture and practical course in sanitary engineering in the Tropics.
16 -----	(*)	48	Combined lecture and practical course in public health records and systems.
17 -----	(*)	48	Practical course in social and vital statistics.
19 -----	(*)	432	Practical course in public health station work.
22 -----	(*)	(*)	Practical quarantine course.
24 -----	(*)	(*)	Practical course in prison sanitation.
<i>Legal medicine.</i>			
5 -----	10	(*)	Legal medicine.
6 -----	5	(*)	Medical economics and ethics.
<i>Parasitology.</i>			
4&5 -----	24	(*)	Combined lecture and practical course in medical zoölogy.
6A -----	102	(*)	Combined laboratory and lecture course. Advanced protozoölogy.
6B -----	(*)	(*)	Biologic aspects of protozoölogy.
6C -----	(*)	(*)	General protozoölogy.
7A -----	(*)	(*)	Research course in protozoölogy.
7B -----	(*)	(*)	Experimental protozoölogy.
8 -----	102	(*)	Advanced course in helminthology.
9 -----	(*)	(*)	Research course in helminthology.
10 -----	102	(*)	Advanced course in medical entomology.
11 -----	(*)	(*)	Research course in medical entomology.
<i>Medicine.</i>			
13 -----	12	(*)	Lecture course in medical botany.
14 -----	(*)	(*)	Physical therapy.



*Graduate School of Tropical Medicine and Public Health—Continued.*

Department and courses.	D. T. M.	D. P. H.	Remarks.
<i>Medicine—Continued.</i>	<i>Hours.</i>	<i>Hours.</i>	
15 .....	5	(*)	Lecture course in the most important communicable diseases.
17 .....			Medical clinics.
<i>a</i> .....	13	(*)	Medical clinic; Professor Bautista.
<i>b</i> .....	26	(*)	Medical clinic; Professor Guerrero.
<i>c</i> .....	26	(*)	Medical clinic; Associate Professor Sison.
<i>d</i> .....	13	36	Clinic in infectious and contagious diseases at San Lazaro Hospital; Dr. Ernst.
19 .....	7	(*)	Lecture course in tropical therapeutics.
20 .....	5	(*)	Lecture course in tropical etiology.
22 .....	(*)	(*)	Lecture course in life insurance medicine.
23 .....	(*)	(*)	Course in research medicine.
<i>Obstetrics.</i>			
5 .....	3	(*)	Lecture course in the obstetrical problems of the Tropics.
6 .....	(*)	(*)	Obstetrical clinics and ward visits.
<i>a</i> .....	(*)	(*)	Professor Calderon's daily clinic.
<i>b</i> .....	(*)	(*)	Professor Roxas' clinic.
<i>c</i> .....	(*)	(*)	Out-patient clinics daily; Professor Roxas, Doctors Acosta-Sison and Tolentino.
7 .....	(*)	(*)	Research obstetrics.
<i>Ophthalmology, laryngology, rhinology and otology.</i>			
6 .....	(*)	(*)	Lecture course in problems of the specialties.
7 .....	(*)	(*)	A practical course in refraction and ophthalmoscopy.
8 .....			Clinics.
<i>a</i> .....	(*)	(*)	Operative clinics.
<i>b</i> .....	(*)	(*)	Dispensary clinics.
9 .....	(*)	(*)	Research.
10 .....	(*)	9	Physical Examination.
<i>Pathology.</i>			
6 .....	5	(*)	Lecture course; Pathology.
7 .....	144	(*)	Laboratory course; Pathology.
8 .....	36	(*)	Laboratory course; Bacteriology.
9 .....	(*)	144	Laboratory and practical course; Immunity.
10 .....	108	(*)	Clinical Laboratory.
<i>Pediatrics.</i>			
5 .....	5	(*)	Lecture course on pediatric problems in the Tropics.
6 .....	4	(*)	Lectures and practical work in infant feeding.
7 .....	(*)	(*)	Pediatric clinics, daily; Professor Albert.
8 .....	(*)	(*)	Research pediatrics.
<i>Surgery.</i>			
15 .....	5	(*)	Lecture courses in the problems of tropical surgery.
16 .....	5	(*)	Combined lecture and practical course in surgical pathology.
17 .....	(*)	(*)	A lecture course in surgical technique in the Tropics.

*Graduate School of Tropical Medicine and Public Health—Continued.*

Department and courses.	D. T. M.	D. P. H.	Remarks.
<i>Surgery—Continued.</i>	<i>Hours.</i>	<i>Hours.</i>	
18 .....	(*)	(*)	Surgical clinics.
<i>a</i> .....	(*)	(*)	Professor Guazon's clinic in operative surgery and ward visits throughout the year.
<i>b</i> .....	(*)	(*)	Doctors Reyes' and Santos' clinic in operative surgery and ward visits throughout the year (elective).
<i>c</i> .....	(*)	(*)	Assistant Professor Eduque's and Doctor Vazquez' clinic in operative surgery and ward visits throughout the year.
19 .....	(*)	(*)	Practical course in operative surgery on the cadaver.
20 .....	(*)	(*)	Practical course in animal surgery.
21 .....	(*)	(*)	Research surgery.
22 .....	(*)	(*)	Military surgery.

Credit may be given for work performed during the sixth or hospital year as outlined above, or for other hospital intern service at the discretion of the committee on the graduate school.

*Summary of enrollment of the Graduate School of Tropical Medicine and Public Health during the academic year 1917-18.*

Regular .....	10
Special .....	24
Total .....	34

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## SCHOOL OF PHARMACY

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## SCHOOL OF PHARMACY

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### Officers of Administration

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IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

FERNANDO CALDERON,  
Dean, College of Medicine and Surgery.

MARIANO V. DEL ROSARIO,  
Director of the School.

### COMMITTEE

MARIANO V. DEL ROSARIO, Professor of Pharmaceutical Chemistry, Chairman.

AUGUSTUS P. WEST, Professor of Chemistry.

ELMER D. MERRILL, Associate Professor of Botany.

FELIX HOCSON, Associate Professor of Pharmacy.

JOAQUIN MARAÑON, Instructor in Pharmacy.

### FACULTY

(Faculty of the College of Medicine and Surgery.)



## **Officers of Instruction**

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**MARIANO V. DEL ROSARIO, B. A., Phar. D., M. S., M. D.,**  
Professor of Pharmaceutical Chemistry and Director of the School of Pharmacy.

**FELIX HOCSON, B. A., Ph. C., Phar. D.,**  
Associate Professor of Pharmacy,  
School of Pharmacy.

**JOAQUIN MARAÑON, Ph. G., B. S.,**  
Instructor in Pharmacy,  
School of Pharmacy.

**CANDELARIA V. LEIVA, Ph. G., B. A., B. S.,**  
Assistant in Pharmacy,  
School of Pharmacy.

(For instruction in medical economics and ethics, physiology, hygiene, pathology, bacteriology, and pharmacology, see Faculty, College of Medicine and Surgery; botany, mathematics, chemistry, zoölogy, English, French and German, see Faculty, College of Liberal Arts.)





# SCHOOL OF PHARMACY

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## HISTORY

The School of Pharmacy, organized during the year 1914, has had its beginning within the University, and is a logical outgrowth of the Course in Pharmacy instituted under the administrative control of the College of Liberal Arts, June 5, 1911.

In 1910, upon the recommendation of the President of the University, a committee was appointed by the Board of Regents for the purpose of determining the efficiency of the instruction in pharmacy as given by the then existing schools and colleges in the Philippine Islands, and for the purpose of deciding upon the feasibility of giving such instruction at the University of the Philippines. As a result of the report of this committee, the Board of Regents appropriated the sum of ₱18,000 for the purchase of additional equipment and materials necessary to the offering of a modern course in pharmacy.

During the school year 1911-12, or the first year that instruction in pharmacy was given at the University, the total enrollment in the course was 32; during the following year, it had increased to 35; in the third year there were 46 pupils enrolled; in the fourth year there were 77 students; in the fifth year there were over 80 students enrolled. It was for the purpose of better administering to the general wants of these students as well as adding to the efficiency of the instruction, that, on February 12, 1914, the Board of Regents, upon the recommendation of the President of the University, authorized the establishment of a School of Pharmacy as a department of the College of Medicine and Surgery.

With the transfer of the management of the Department of Pharmacy of the Philippine General Hospital to the School of Pharmacy, on July 16, 1914, pharmaceutical instruction in the University again received a stimulus, and the field of activity and usefulness of the latter institution was very considerably enlarged. During the year 1917, the department dispensed over 150,000 prescriptions in addition to manufacturing large quantities of galenicals and hospital supplies.

The School of Pharmacy is a member of the American Conference of Pharmaceutical Faculties.

## ADMISSION REQUIREMENTS

The requirement for admission to the School of Pharmacy is graduation from any high school recognized by the Government or its equivalent. All applications should be directed to the Director of the School of Pharmacy or the Secretary of the College of Medicine and Surgery.

## ADMISSION BY CERTIFICATE

Applicants who desired to be admitted without examination should send by mail all diplomas, certificates, and statements offered in place of the entrance examinations to the director of the school or the secretary of the College of Medicine and Surgery during the summer before the opening of school year, not later than the 15th of June. For the details of admission by certificate see the University Catalogue.

The applicant should not overlook the fact that the notebooks in the science subjects must be mailed with the certificates.

## ADMISSION BY EXAMINATION

Applicants desiring to be admitted by examination should obtain permission to take the entrance examinations from the chairman of the University Committee on Admissions. Permission should be obtained at least two weeks before the date of the examination to be taken. For further details see University Catalogue.

## ADMISSION TO ADVANCED STANDING

Applicants for admission to advanced standing must meet the following requirements:

1. Submit evidence of their previous studies satisfactory to the faculty.
2. Pass an examination in each subject, or its equivalent, of the pharmacy course completed by the students of the class which they desire to enter.
3. Have studied as matriculated pharmacy students in an approved school or college of pharmacy for a period of time at least equal to that already spent by the class which they seek to enter.

Candidates for graduation on advanced credit must complete at least the last two years of their studies in this school unless permission for different arrangement has been obtained from the faculty.

4. Candidates will be admitted to examinations for advanced standing only upon special authority granted by the faculty. Such examinations will be held only at the time of the regular entrance examinations.

## SPECIAL STUDENTS

Students desiring to take a special course in the School of Pharmacy must meet the same entrance requirements as regular students. They will be admitted only upon recommendation of a special committee and by vote of the faculty. Special courses do not lead to a degree. Graduates in pharmacy may be admitted as special students by action of the faculty.

## EXAMINATIONS

Examinations will be held at the end of each semester upon the completion of each subject, and at such other times as the teacher in charge of a course may elect.

Conditions in subjects in pharmacy must be removed before the end of the semester immediately following or at the beginning of the next semester.

## RULES GOVERNING ADVANCEMENT AND PROMOTION

The rules governing the advancement or promotion of a student from semester to semester or year to year are the same as those in force in the College of Medicine and Surgery.

## DEPOSIT AND FEES

Tuition in the school is ₦30 a semester. Each student will be required to deposit ₦10 with the secretary upon matriculation. This fee is deemed necessary to cover any losses of apparatus, books, supplies, etc., or any damage to university property which may properly become a charge against the students.

A fee of ₦5 per semester will be charged in all laboratory courses giving 3 units of credit for a semester. In courses where the credit to be obtained is more or less, the fee will vary accordingly.

An athletic fee of ₦1 per semester will be charged each student for each semester.

## LIBRARY FACILITIES

The library of the Bureau of Science is open to all students in pharmacy. The library at present contains complete sets of nine important journals of pharmacy along with many other reference works on pharmacy, chemistry, botany, and the medical sciences. The student should find ample opportunity for current reading as fourteen of the leading foreign publications pertaining to pharmacy are regularly received and are at his disposal.

## LABORATORIES AND EQUIPMENT

Students in pharmacy do their work in the separate buildings housing the various departments of the University, a condition which possesses distinct advantages.

The botanical laboratories are equipped with an adequate number of microscopes and are supplied with the necessary specimens of plants, drugs, etc.

The courses in general and applied chemistry are given in properly equipped laboratories.

The laboratory work in Pharmacy proper, is at present being carried on principally in the Pharmacy Building of the Philippine General Hospital. A number of machines for manufacturing on a fairly large scale have been installed in the building, and are at present in operation.

## COURSES AND DEGREES

Two courses of study leading to degrees are offered by this school—a three-year course and a four-year course.

The object of the shorter course is primarily to train students who desire to become dispensing pharmacists. The course meets all the requirements of the Pharmacy Board of Examiners and students completing it should find no difficulty in securing registration. On the satisfactory completion of this course, the student is granted the degree of Graduate in Pharmacy.

The four-year course, on the other hand, furnishes more extensive and more thorough training. It is so arranged that the student may do advanced work in bacteriology, botany, chemistry, or pharmacy and thereby equip himself for service as a pharmaceutical chemist, public analyst, food and drug expert, or for other work of a similar nature. The degree of Bachelor of Science in Pharmacy is conferred upon the candidates successfully completing this course.

## SPECIAL COURSES

Graduate students in pharmacy desiring to take special courses in dispensing, manufacturing, and management of a drug store, etc., will be admitted at anytime upon application to the Director of the School of Pharmacy or to the Secretary of the College of Medicine and Surgery. Such courses do not lead to a degree. A University certificate of attendance will be given those special students who have completed in a satisfactory manner twenty-four or more weeks of graduate instruction.

## REGISTRATION WITH THE PHARMACY BOARD OF EXAMINERS

In accordance with section 16 of Act No. 2382, an Act regulating the practice of pharmacy in the Philippine Islands—

Every person desiring to begin the practice of pharmacy in the Philippine Islands after the passage of this Act shall apply to the Board of Pharmaceutical Examiners for a certificate of registration as registered pharmacist, but no certificate as second-class pharmacist (*practicante de farmacia*) shall be issued to any such person by the Board. The examination referred to by subsection (a) of section three of this Act shall be held in each of the following subjects: General chemistry, inorganic chemistry and organic chemistry applied to pharmacy; physics as applied to pharmacy; botany, pharmacology, pharmacognosy; qualitative analytical chemistry and its special application to the analysis of medicines; quantitative analytical chemistry, toxicology and microscopy; pharmaceutical practice and compounding of prescriptions. To be admitted to examinations applicants must pay the secretary-treasurer of the Board ten dollars as an examination fee, which amount shall serve such applicants as a fee entitling them to the certificate mentioned in section five, in case they pass their examination; they shall moreover establish: that they have completed twenty-one years of age; that they have been graduated from a legally chartered school, college or university; that they have been registered in the office of the secretary of the Board as apprentices in pharmacy; that they have had at least two years' practical experience in a pharmacy where the prescriptions of physicians or veterinarians are compounded and where drugs, medicines and poisons are sold at retail: *Provided*, That from and after July first, nineteen hundred and thirteen, every person presenting himself for examination who has graduated from a legally chartered school, college or university in which said subjects or pharmaceutical studies are taught, in addition to the requirements hereinbefore set forth, shall submit satisfactory evidence that he has followed and has been examined in the studies preliminary to the study of pharmacy in a school, college or university approved by the Secretary of Public Instruction: *Provided, further*, That any person who has heretofore been admitted to examination, may hereafter present himself for examination without the requirements referring to preliminary studies in a college approved by the Secretary of Public Instruction: *Provided, lastly*, That any candidate who has failed to pass the examination satisfactorily three times, may not again be examined before the Board prior to one year from the date he was admitted to the last examination. It shall be the duty of the Examining Board to prepare the programme of subjects above mentioned in such manner that the same shall contain all of the knowledge that ought to be required from the candidate to show him capable of practicing pharmacy, which programme, after being approved by the Secretary of the Interior, shall be published in English and Spanish three months before the date of the examinations when it is to be used: *Provided*, That any alteration that the Examining Board may later wish to introduce in said programme shall also be approved by the Secretary of the Interior and published three months before the date of the examination. The Pharmaceutical Examining Board shall issue a registered pharmacist's certificate to anyone who has passed the examination mentioned in this section, but shall issue no certificate of *practicante de farmacia* to

any second-class pharmacist. The Examining Board is hereby authorized to issue rules not in conflict with the provisions of this Act for the enforcement thereof, and prescribe penalties in said regulations not exceeding one hundred dollars fine and two months imprisonment or both at the discretion of the court. Such rules shall have the force of law when approved by the Secretary of the Interior.

## COURSES OF STUDY OF THE SCHOOL OF PHARMACY

### *The three-year course*

[Leading to the Degree of Graduate in Pharmacy.]

#### FIRST YEAR

First semester:	Units.	Second semester:	Units.
Botany 2.....	3	Botany 2.....	3
Chemistry 1.....	3	Chemistry 1.....	3
English 1.....	3	English 1.....	3
German 1 or French 1 (elective)....	3	German 1 or French 1 (elective)....	3
Mathematics (College Algebra).....	3	Pharmacy 3.....	3
Zoölogy 2.....	3	Pharmacy 8.....	1
Total .....	18	Pharmaceutical Chemistry 9.....	1
		Athletics .....	1
		Drug store practice .....	
		Total .....	18

#### SECOND YEAR

First semester:	Units.	Second semester:	Units.
Bacteriology 5a.....	2	Botany 8.....	3
Botany 7.....	3	Chemistry 2.....	3
Chemistry 2.....	3	Chemistry 4.....	3
Chemistry 3.....	3	German 2 or French 2 (elective)....	3
German 2 or French 2 (elective)....	3	Pharmaceutical Chemistry 2.....	2
Pharmaceutical Chemistry 1.....	3	Pharmacy 4.....	3
Drug store practice.....		Athletics .....	1
Total .....	17	Drug store practice.....	
		Total .....	18

#### THIRD YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 103 (accounting and business practice).....	2	Hygiene 1.....	3
Pharmaceutical Chemistry 3.....	3	Hygiene 3b.....	2
Pharmaceutical Chemistry 5.....	3	Pharmacology 6.....	3
Pharmacy 6.....	2	Pharmacy 2.....	1
Pharmacy 1.....	1	Pharmacy 5.....	3
Physiology 2.....	3	Physiology 2.....	3
Physiology 3.....	3	Athletics .....	1
Drug store practice.....		Drug store practice.....	
Total .....	17	Total .....	16

### *The fourth-year Course*

[Leading to the degree of Bachelor of Science in Pharmacy.]

[Prerequisite, the successful completion of the preceding three years including two years of German or French.]

First semester:	Units.	Second semester:	Units.
Chemistry 8 .....	3	Chemistry 8 .....	3
Hygiene 2 .....	2	Pharmaceutical Chemistry 6.....	3
Hygiene 3a .....	2	Pharmacy 7 .....	3
Pharmaceutical Chemistry 6.....	3	Elective .....	6
Pharmaceutical Chemistry 7.....	3	Total .....	16
Elective .....	3		
Total .....	16		

*Outline of Course in the School of Pharmacy*

[Hours of required work in each subject on the basis of 34 weeks of actual instruction in each year.]

**FIRST YEAR**

	Didactic.	Laboratory.	Total.
	<i>Hours.</i>	<i>Hours.</i>	<i>Hours.</i>
<i>Botany:</i>			
2. Morphology .....	68	204	272
<i>Chemistry:</i>			
1. General inorganic .....	102	204	306
<i>English:</i>			
1. Composition .....	102		102
<i>German:</i> <sup>a</sup>			
1. Elementary .....	102		102
<i>French:</i> <sup>a</sup>			
1. Elementary .....	102		102
<i>Mathematics:</i>			
1. College Algebra .....	34		34
<i>Pharmaceutical Chemistry:</i>			
9. Pharmaceutical Calculations .....	17		17
<i>Pharmacy:</i>			
2. Pharmaceutical Physics .....	17	102	119
3. Pharmaceutical Latin .....	17		17
<i>Zoölogy:</i>			
2. General .....	17	136	153
<b>Total</b> .....	<b>578</b>	<b>646</b>	<b>1,224</b>

<sup>a</sup> German or French elective.

**SECOND YEAR**

	Didactic.	Laboratory.	Total.
	<i>Hours.</i>	<i>Hours.</i>	<i>Hours.</i>
<i>Bacteriology:</i>			
5a. Pharmacy .....	34	68	102
<i>Botany:</i>			
7. Vegetable histology .....	17	136	153
8. Pharmacognosy .....	17	136	153
<i>Chemistry:</i>			
2. Organic .....	102	204	306
3. Qualitative analysis .....	34	119	153
4. Quantitative analysis .....	34	119	153
<i>German:</i> <sup>a</sup>			
2. Intermediate .....	102		102
<i>French:</i> <sup>a</sup>			
2. Intermediate .....	102		102
<i>Pharmaceutical Chemistry:</i>			
1. Inorganic and Organic preparations .....	17	102	119
2. Pharmacopoeial testing .....	17	51	68
<i>Pharmacy:</i>			
4. Galenical preparations .....	17	102	119
<i>Drug-store practice:</i>			
Practical work in the Hospital Pharmacy .....		136	136
<b>Total</b> .....	<b>493</b>	<b>1,173</b>	<b>1,666</b>

<sup>a</sup> German or French elective.

## Outline of Courses in the School of Pharmacy—Continued.

## THIRD YEAR

	Didactic.	Laboratory.	Total.
	Hours.	Hours.	Hours.
<i>Hygiene:</i>			
1. Hygiene and sanitation .....	51		51
3b. Chemical .....		68	68
<i>Mathematics:</i>			
103. Accounting and Business Practice .....	51		51
<i>Pharmacology:</i>			
6. Pharmacology and Toxicology .....	34	51	85
<i>Pharmaceutical Chemistry:</i>			
3. Pharmaceutical Assaying .....	17	102	119
5. Chemical Toxicology .....	17	102	119
<i>Pharmacy:</i>			
1. History of Pharmacy .....	17		17
2. Pharmaceutical Jurisprudence and Ethics .....	17		17
5. Prescriptions .....	17	102	119
6. Materia Medica and Therapeutics .....	34		34
<i>Physiology:</i>			
2. Physiological Chemistry .....	68	204	272
3. General .....	34	68	102
<i>Drug-store practice:</i>			
Practical work in the Hospital Pharmacy .....		136	136
Total .....	357	833	1,190

## FOURTH YEAR

	Didactic.	Laboratory.	Total.
	Hours.	Hours.	Hours.
<i>Chemistry:</i>			
8. Advanced analytical .....	34	238	272
<i>Hygiene:</i>			
2. Communicable diseases .....	51		51
3a. Biological .....		68	68
<i>Pharmaceutical Chemistry:</i>			
6. Plant Chemistry .....	34	204	238
7. Organic synthesis .....	17	102	119
<i>Pharmacy:</i>			
7. Manufacturing Pharmacy .....	34	85	119
<i>Electives:</i>			
In botany, chemistry, or pharmacy .....			357
Total .....			1,224

## SPECIAL COURSE

Subjects :	Hours.
Retail pharmacy .....	472
Wholesale pharmacy .....	236
Manufacturing pharmacy .....	472
Bookkeeping .....	236
Inventories .....	15



COURSES OF INSTRUCTION  
BACTERIOLOGY

5a. In the Philippines the pharmacist of the provinces, in many places, undoubtedly, will be called upon in emergencies to assist the physician in sanitary work or occasionally to act on his own initiative. For this reason it has been deemed advisable to include in his training sufficient bacteriology to prepare him for such work. The course will not be as extensive or complete as that given in the course for medical students.

A number of the more common pathogenic bacteria are studied in the laboratory, and the modes of their dissemination and their relation to diseases pointed out.

The principles of disinfection and sterilization are emphasized. A brief consideration of the laws of immunity is given and the methods of preparation of antisera and bacterial vaccines are described.

[Second year, first semester; 2 units; 99 hours.  
Doctor MANALANG.

BOTANY

2. *Morphology and Classification of Plants.*—A course designed primarily for students of pharmacy. Special attention will be given to the study and classification of the local flora, the lectures and laboratory work to be supplemented by studies in the field and in the herbarium, including the preparation of a small herbarium by each student. Selected types of plants of economic importance as the source of drugs, etc., will be studied extensively. One object of the course is to give students of pharmacy a broad conception of the principles of taxonomy and the relationships of various groups of plants, as a basis for future work in botany and pharmacognosy.

Textbook; Kraemer, Botany and Pharmacognosy.

[Throughout the first year; 6 units; 297 hours.  
Professor MERRILL.  
Mr. SANTOS.

7. *Pharmacognosy.*—A study of the crude vegetable drugs of the United States Pharmacopoea. Each student will be provided with a compound microscope for use in the laboratory. The laboratory work will cover the gross and microscopical character of the drugs and include some study of powdered drugs. Identification will receive careful attention and there will be frequent tests of ability to determine drugs. Lectures and tests will cover the main facts of the pharmacography of each drug. The roots, rhizomes, barks and leaves will be taken up in this semester.

Textbook: Kraemer, Applied and Scientific Pharmacognosy.

[9 hours, second year, first semester; 3 units.  
Associate Professor SHAW.  
Mr. LINO.

8. *Pharmacognosy*.—A continuation of the preceding course, dealing with the flowers, fruits, seeds and miscellaneous vegetable and animal drugs of the United States Pharmacopoea.

[9 hours, second year, second semester; 3 units.

Associate Professor SHAW.

Mr. LINO.

### CHEMISTRY

1. *Elementary General Inorganic Chemistry*.—Lectures, recitations, and laboratory work.

[Throughout the first year; 6 units; 297 hours.

Professor M. V. DEL ROSARIO.

2. *Compounds of Carbon*.—Lectures, recitations and laboratory work.

[Throughout the second year; 6 units; 297 hours.

Professor WEST.

Miss HERRERA.

3. *Qualitative Analysis, Inorganic*.—Lectures, recitations, and laboratory work.

[Second year, first semester; 3 units; 148 hours.

Assistant Professor DEL ROSARIO.

4. *Quantitative Analysis, Inorganic*.—Lectures, recitations, and laboratory work.

[Second year, second semester; 3 units; 148 hours. Assistant Professor DEL ROSARIO.

8. *Analytical Chemistry*.—A course for advanced students. Lectures and laboratory work. This course is designed to fit the needs of each student, and will include work in analysis of minerals, cements, sugars, foods, organic analysis, electrolytic methods, gases, waters, etc.

[Throughout the fourth year; 6 units; 297 hours.

Professor WEST.

Miss HERRERA.

### ENGLISH

1. *Composition*.—A practical course in writing and speaking English.

[Throughout the first year; 6 units; 99 hours.

Associate Professor HILLES.

### FRENCH

1. *Elementary French*.—Elementary grammar and composition; translation and sight reading of simple French prose.

Textbook: Frazer and Squair, French Grammar.

[Throughout the first year; 6 units; 99 hours. Mrs. FISCHER.

2. *Intermediate French* (prerequisite, French 1).—Advanced grammar and composition; translation and sight reading of French prose.

[Throughout the second year; 6 units; 99 hours. Mrs. FISCHER.

### GERMAN

1. *Elementary German*.—The object of the course is to enable students to use the German language (*a*) in answering questions

concerning the contents of, and the elements of grammar in an easy piece of reading; (b) in writing a simple letter, a description of an object in view, or a similar easy composition; (c) in translating from easy English.

[Throughout the first year; 6 units; 99 hours.  
Assistant Professor SCHERER.  
Mr. NATIVIDAD.

2. *Intermediate German*.—For statement see University Catalogue, page 64.

[Throughout the second year; 6 units 99 hours. Assistant Professor SCHERER.

### HYGIENE

1. *Lectures in Hygiene and Sanitation*.—This course comprises all the subjects usually taught, especial attention being given to the study of water, air, food, plumbing, disposal of human wastes, control of the city's water and milk supply, infant mortality, adulteration of foods, and other fundamental principles essential to practically applied hygiene and sanitation. Textbook; Harrington, Practical Hygiene.

[Third year, second semester; 3 units; 50 hours.  
Associate Professor S. V. DEL ROSARIO.

2. *Communicable Diseases*.—A study of the methods of combating the dangerous communicable diseases, especially those of intestinal origin like cholera, dysentery, intestinal parasites, etc.

[Fourth year, first semester; 2 units; 33 hours.  
Professor LONG.  
Associate Professor S. V. DEL ROSARIO.

3. *Laboratory*.—(3a) *Biological*: This course consists in lectures and practical work in bacteriologic and other biologic technique required to make the student familiar with the practical examination of water, air, milk, food, etc.

[Fourth year, first semester; 68 hours.  
Doctor CONCHA-BRILLANTES.

(3b) *Chemical*: The course consists in talks and laboratory work in the chemical technique required to enable the student to become familiar with the practical examination of water, air, milk, foods, etc.

[Third year, second semester; 68 hours.  
Professor M. V. DEL ROSARIO.

### MATHEMATICS

1. *College Algebra*.—Review in involution and evolution; surds; theory of exponents and quadratic equations; inequalities; pure, imaginary, and complex numbers; indeterminate linear equations; ratio and proportion; variation; progressions; undetermined coefficients; the binomial theorem for any exponent; logarithms. This course is required of all students in pharmacy. Textbook; Wells, Advanced Course in Algebra.

[3 hours, either semester; 3 units.

**103. Accounting and Business Methods.**—Primarily for students in the School of Pharmacy. Includes business calculations, accounting, invoices and banking. Required of students in the School of Pharmacy.

[2 hours, first semester; 2 units.

Mr. FABELLA.

#### PHARMACOLOGY

**6. Pharmacology and Toxicology for Pharmacy Students.**—A laboratory and lecture course. The laboratory work will consist of the biological assay of drugs, a study of the action of toxic doses of drugs upon animals and the proper treatment under such conditions. The lectures will be closely correlated with the laboratory work except that the pharmacological action of drugs in therapeutic doses will also be taken up.

[Third year, second semester; 3 units; 83 hours.

Assistant Professor DE LA PAZ.

Dr. GARCIA.

#### PHARMACY

Associate Professor FELIX HOCSON, Chief of Department; Mrs. CANDELARIA V. LEIVA, Mr. EUGENIO QUESADA, and Graduate Student Assistants.

**1. History of Pharmacy.**—This course of lectures discusses the development of pharmacy from its earliest stages to the present time.

[Third year; first semester; 1 unit.

Mrs. C. V. LEIVA.

**2. Pharmaceutical Jurisprudence and Ethics.**—The instruction in this course is given by lectures one hour per week, during the second semester, to the third year students of Pharmacy, covering the discussion of the legal status of the pharmaceutical profession the legal responsibilities and duties of pharmacists and the application of pharmacy to the requirements of law.

With respect to ethics, special lectures are given consisting of a brief discussion of the ethical rules and principles governing the relation and duties of the pharmacists to each other, to the public, to physicians, and to the Government.

Textbook: Harley R. Willey, *Pharmaceutical Jurisprudence*.

[Third year, second semester; 1 unit.

Professor DE LOS ANGELES.

**3. Pharmaceutical Physics.**—Lectures, recitations, and laboratory work. This course is designed to fit the needs of students in pharmacy, and will include the manipulation of balances, thermometers, polariscopes, refractometers, etc.

[First year; second semester; 3 units.

Associate Professor HOCSON.

Mrs. C. V. LEIVA.

**4. Galenical Preparations.**—In this course various galenicals

will be prepared and studied in the laboratory and discussed in the lectures. The course will include the preparation and study of waters, spirits, syrups, elixirs, glycerites, oleates, liniments, infusions, decoctions, tinctures, fluid-extracts, extracts, etc.

[Second year, second semester; 3 units; 116 hours.  
Associate Professor HOCSON.  
Mrs. C. V. LEIVA.

5. *Prescription Reading, Compounding and Dispensing*.—This course is devoted to a study of prescription forms and abbreviations, the compounding of prescriptions, and the dispensing of medicines. It includes a systematic study of incompatibilities and a review of posology as it concerns the pharmacist.

[Third year, second semester; 3 units; 116 hours.  
Associate Professor HOCSON.

6. *Materia Medica and Therapeutics*.—Lectures and recitations. This course is offered only to students in pharmacy.

[Third year; first semester; 2 units.  
Associate Professor HOCSON.

6a. *Materia Medica and Medical Pharmacy*.—Medical course. (See page 41.)

Associate Professor HOCSON.  
Mrs. C. V. LEIVA.

6b. *Materia Medica and Veterinary Pharmacy*.—Course in Veterinary Science. (See page 41 of the University Catalogue.)

Associate Professor HOCSON.  
Mrs. C. V. LEIVA.

6c. *Materia Medica and Pharmacy for Nurses*.—(See School of Nurses Catalogue.)

Associate Professor HOCSON.  
Mr. QUESADA.  
Miss YULO.

7. *Pharmaceutical Manufacturing*.—This course is intended to give students a working knowledge of the various kinds of machinery used in the manufacturing of pharmaceutical products. It is intended thereby to encourage the manufacturing of these products at home rather than their purchase abroad at a large expense. It is a combined lecture and laboratory course.

[Fourth year, second semester; 3 units; 116 hours.  
Associate Professor HOCSON.  
Mr. REYES.  
Mr. LLAMAS.

8. *Pharmaceutical Latin*.—This course deals principally with the Latin terms used in prescriptions. It consists of lectures and recitations. Inasmuch as Latin is not included in the high school curriculum, the course begins with a brief introduction to the study of Latin grammar.

[First year; second semester; 1 unit.  
Mrs. C. V. LEIVA.

## PHARMACEUTICAL CHEMISTRY

Professor MARIANO V. DEL ROSARIO, Chief of Department; Mr. JOAQUIN MARAÑON, and Graduate Student Assistants ———.

1. *Inorganic and Organic Pharmaceutical Preparations.*—It is the aim of this course to train the students in the preparation of the inorganic and organic substances as comprehended in the U. S. Pharmacopoeia, especially such as may be successfully prepared by practicing pharmacists without the use of any expensive set of apparatus than that which is generally found in the outfit of a fairly equipped pharmacy. Instruction is given by lectures, recitations, and laboratory work. In the lectures and recitations the processes and the general principles of preparation, the properties, including incompatibilities, and the methods of preservation of the inorganic and organic substances will be discussed.

The laboratory work will deal mostly with the official preparations according to the pharmacopoeial methods.

[Second year; first semester; 3 units.  
Professor M. V. DEL ROSARIO.  
Mr. MARAÑON.

2. *Pharmacopoeial Testing.*—In the laboratory the student will make the most important physical and chemical tests of official drugs and preparations, including tests for identity, purity and adulteration. This will include determination of solubilities, of specific gravity, of the index of refraction, the time limit test for heavy metals, etc. The lectures will consist in the main of an explanation of the principles and methods used in the laboratory.

[Second year, second semester; 2 units; 83 hours.  
Professor M. V. DEL ROSARIO.  
Mr. MARAÑON.

3. *Pharmaceutical Assaying.*—This course is devoted to a practical study of the chemical assays authorized by the Pharmacopoeia of the United States. The lectures will include a critical discussion of the pharmacopoeial methods and of proposed changes in the methods.

[Third year, first semester; 3 units; 116 hours.  
Professor M. V. DEL ROSARIO.  
Mr. MARAÑON.

4. *Advanced Pharmaceutical Assaying.*—A continuation of pharmacy 5; but covering a wider field as the assays will not be limited to the pharmacopoeia. An elective course open to fourth year students after they have completed the first three years of prescribed studies.

[3 units; 116 hours.  
Professor M. V. DEL ROSARIO.  
Mr. MARAÑON.

5. *Chemical Toxicology*.—This course will consist of lectures and laboratory work. In the laboratory the student will study the chemical properties of poisonous substances and the processes of detection in the presence of other substances, including foods, stomach contents, tissues, etc. Where practicable, quantitative estimations will also be made.

This course is also open to qualified students of medicine.

[Third year, first semester; 3 units; 66 hours.

Professor M. V. DEL ROSARIO.

Mr. MARAÑON.

6. *Plant Chemistry*.—This course consists in lectures and laboratory exercises with special reference to medicinal plants. The laboratory work will include a study of the methods of plant analysis, and the isolation and identification of various plant constituents, such as ferments, resins, volatile oils, fatty oils, waxes, carbohydrates, proteins, glucosides, alkaloids, saponins, tannins, plant pigments, etc.

[Fourth year, first and second semester; 6 units.

Professor M. V. DEL ROSARIO.

Mr. MARAÑON.

7. *Organic Synthesis*.—A laboratory course in the synthesis of organic compounds of pharmaceutical or medical interest. The course is designed especially for the students taking the four-year course.

[Fourth year, first semester; 3 units; 116 hours.

Professor M. V. DEL ROSARIO.

Mr. MARAÑON.

8. *Pharmaceutical research*.—There is an abundance of plant life in the Tropics, and the chemistry of the medicinal plants of the Philippines has hardly been touched. Climatic conditions in the Islands are such as to make necessary various changes in the preparations and methods of the United States Pharmacopœia. Research along these two lines is therefore of interest and of value. Work of this nature is open to all qualified students, the hours to be arranged with the instructor.

Professor M. V. DEL ROSARIO.

Associate Professor HOCSON.

9. *Pharmaceutical Calculations*.—This course consists of the study of weights and measures; temperatures; specific gravity; specific volumes; percentage solutions; alligation applied to pharmacy; atomic and molecular weights and all those mathematical problems which are met by the students in pharmacy and the practitioners of the profession.

Mr. MARAÑON.

## PHYSIOLOGY

2. *Physiological Chemistry and the Physiology of Nutrition*.—  
(a) Lectures, recitations and laboratory work in the chemistry

of the carbohydrates, fats, and proteins, and the connective tissues.

(b) The chemistry and chemical physiology of muscle and of nervous tissue; of blood and of respiration; of secretion, digestion, and absorption; the ductless glands; the metabolism of fats, carbohydrates, and proteins, animal heat; normal and pathological urines, and the conduction of a metabolism experiment.

[Third year; 272 hours.

Professor GIBSON.

Assistant Professor CONCEPCION.

Doctor GUEVARRA.

3. *General Physiology (short course)*.—A lecture and laboratory course designed especially for students in pharmacy and dentistry.

[Third year, first semester; 3 units; 83 hours.

Assistant Professor CONCEPCION.

Doctor GUEVARRA.

## ZOOLOGY

2. *Zoölogy for Pharmacy Students*.—The course will deal principally with the dissection of the cat, frog, and turtle, but other forms such as leeches, beetles, and sponges will be studied.

[First year, first semester; 3 units; 148 hours.

Assistant Professor WHARTON.

*Summary of enrollment of the School of Pharmacy during the academic year 1917-18.*

Fourth year.....	1
Third year.....	28
Second year.....	16
First year.....	35
Special .....	3
Total .....	83



THE UNIVERSITY OF THE PHILIPPINES

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THE COLLEGE OF AGRICULTURE

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NINTH ANNUAL ANNOUNCEMENT AND CATALOGUE



## Faculty of the College of Agriculture

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IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

EDWIN BINGHAM COPELAND, Ph. D.,<sup>1</sup>  
Dean of the College of Agriculture, Professor of Plant Physiology.

CHARLES FULLER BAKER, M. A.,<sup>2</sup>  
Acting Dean, College of Agriculture, and Professor of Agronomy.

CHARLES SUMNER BANKS, M. S.,  
Professor of Entomology.

HAROLD CUZNER, B. S. F.,  
Professor of Agricultural Engineering.

FREDERICK WILLIAM FOXWORTHY, Ph. D.,  
Associate Professor of Forestry.

FREDERICK WILLIAM ASHTON, M. S.,  
Associate Professor of Chemistry.

FORMAN TAYLOR McLEAN, Ph. D.,  
Associate Professor of Plant Physiology.

OTTO A. REINKING, M. S.,  
Associate Professor of Plant Pathology.

JOSEPH A. COCANNOUER, M. S.,  
Assistant Professor of Agronomy.

INOCENCIO ELAYDA, M. S.,  
Assistant Professor of Agronomy and Farm Superintendent.

BIENVENIDO MARIA GONZALEZ, M. S.,  
Assistant Professor of Animal Husbandry.

MANUEL LUZ ROXAS, Ph. D.,  
Assistant Professor of Chemistry.

SAM F. TRELEASE, Ph. D.,  
Assistant Professor of Plant Physiology.

CHARLOTTE R. GILLIS, B. S.,  
Instructor in English.

JOSÉ J. MIRASOL, M. S.,  
Instructor in Agronomy.

MARIANO B. RAYMUNDO, B. S. A.,  
Instructor in Economics and Accounting.

FRANCISCO O. SANTOS, A. B.,  
Instructor in Mathematics.

VALENTE VILLEGAS, B. Agr.,  
Instructor in Animal Husbandry.

EMMA S. YULE, B. D.,  
Instructor in English.

JOSÉ S. VILLACORTA, M. D.,  
College Physician.

SOTERO F. ALBANO, B. Agr.,  
Assistant in Mathematics.

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<sup>1</sup> Retired.

<sup>2</sup> Prof. Baker returned and became Acting Dean in Jan. 1918.

VICENTE C. ALDABA, B. S. Agr.,<sup>1</sup>  
Assistant in Mathematics.

LEOPOLDO S. CLEMENTE, B. Agr.,  
Assistant in Agronomy.

JOSÉ Q. DACANAY, B. S. A.,  
Assistant in Economics.

FERNANDO D. LUISTRO, B. Agr.,  
Assistant in Agronomy.

FRANCISCO D. MARQUEZ, B. Agr.,<sup>1</sup>  
Assistant in Agronomy.

PEDRO L. MONTELLANO, B. Agr.,  
Assistant in Chemistry.

NEMESIO BLANCO MENDIOLA, M. S.,<sup>2</sup>  
Assistant in Agronomy.

RAFAEL B. ESPINO, B. Agr.,<sup>2</sup>  
Assistant in Plant Physiology.

GERARDO O. OCFEMIA, B. Agr.,  
Assistant in Plant Physiology.

ELIAS H. PANGANIBAN, B. Agr.,  
Assistant in Agronomy.

FRANCISCO A. QUISUMBING, B. Agr.,  
Assistant in Chemistry.

LEOPOLDO B. UICHANCO, B. S. A.,  
Assistant in Entomology.

TOMAS I. VISTA, B. Agr.,  
Assistant in Agronomy.

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<sup>1</sup> Resigned.

<sup>2</sup> University Fellow in the United States.

# THE COLLEGE OF AGRICULTURE

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## HISTORY

The College of Agriculture was the first college to be organized as a part of the University, beginning its class work on June 14, 1909. Classes met at first in the houses of the faculty, then in tents loaned by the Bureau of Education. This condition lasted until October 4 of that year, when the completion of a building of mixed materials made it possible for classes to meet on the college farm. The enrollement during the first year was 56.

The permanent buildings of the college are:

(1) An administration and academic building, containing the office of the dean, five class rooms, two library rooms, and what was intended for a large reading room, but is used for a laboratory for first-year botany.

(2) A laboratory building, housing the department of chemistry.

(3) A stable and bodega.

(4) A silk-culture house.

(5) A plant-propagation house.

(6) An electric power house.

(7) A building for animal husbandry.

(8) A building containing laboratories for physics and agricultural engineering, and plant physiology, and a lecture hall.

(9) An agronomy class room and tobacco house.

(10) A seed and harvest laboratory.

(11) An agronomy laboratory, which provides room for entomology and plant pathology.

These buildings are all constructed of reinforced concrete. The structure which at first housed the entire institution is now devoted to the department of agronomy and the physician's office.

The attendance at the college during its second year was 95; in the third year, 175; in the fourth, 253; in the fifth, 294; in the sixth, 380; in the seventh, 427; in the eighth, 431; in the ninth 564. During preceding years, these numbers have included the School of Forestry, but for the eighth and ninth years they do not. The attendance has decidedly outgrown the equipment of the college.

## GENERAL INFORMATION

Los Baños can be reached from Manila by boat or by rail. There are three trains daily, each way.

*Site.*—The college occupies a tract of about 127 hectares of land, situated at the foot of Mount Maquiling and about 3 kilometers east of the village of Los Baños. The land is diversified, and permits the cultivation of every important crop of the Philippines. An excellent macadamized road leads from Manila through Los Baños to the college.

*Life of students.*—A large majority of the students live in clubhouses, most of which are located on the campus, where they form a barrio. The college furnishes, without rent, land for the houses, and oversees the sanitation and neatness of the barrio. The clubs own their houses, and in part have built them. The average cost has been about ₱25 a student. The cost of living in these clubs varies from less than ₱10 a month to ₱20. In several houses owned by the student body collectively, rooms are rented at ₱1.50 a month. The college operates its own water and electric plants.

*Student activities.*—The students have organized themselves into a Student Body, with its several committees on athletics, finance, social affairs, domestic improvement, and publication. They publish a monthly magazine, the Philippine Agriculturist and Forester, devoted to the promotion of the agricultural and forest interests of the Islands. Students' athletics have taken the direction of baseball, tennis, and track work. There are the usual literary, musical and technical organizations. Various places of agricultural or other interest near Los Baños are visited by the students. The classes in gardening visit the Chinese and other gardens in Manila. Several students have delivered lectures during the year before different bodies with agricultural interests.

A few of the more advanced students are employed as student assistants, receiving a maximum salary of ₱25 a month. Students are also appointed janitors for the college buildings at the rate of from ₱12 to ₱14 a month. The Dean is authorized to employ as many students as he may need, at 10 to 15 centavos an hour depending on the grade of the student's work; at this rate, bright and energetic students can pay their necessary living expenses and keep up the required work of the college. There will be an opportunity during the coming year for at least 80 students to earn their living in this way.

*Library.*—The library occupies a room in the academic building. It contains standard works of reference, standard works on agriculture and kindred sciences, and a collection of publications on tropical agriculture.

A branch library is maintained in the Chemistry Department in charge of the stock room, containing those books most used as references by students of the department, and supplemented by the private libraries of the staff.

A large number of books from the library of the Bureau of Science is on regular deposit in the College of Agriculture. Other books can be secured on request, if they can be spared from Manila.

The equipment of the college is described under the several departments.

*Fees.*—Tuition in the college is free, and there are no matriculation or graduation fees. A deposit of ₱15 must be made at the beginning of each year by each student. This is to cover destruction of property, and the balance remaining after paying for property lost or destroyed is returned at the end of the year. In all laboratory and field work the students are responsible for all college property given into their care.

#### ADMISSION AND GRADUATION

The College of Agriculture offers two undergraduate courses:

(1) A six-year course, based on the completion of the first two years of the public high school or equivalent training and leading to the degree of Bachelor of Agriculture.

(2) A four-year course, based on the completion of the high-school course of the public schools, and leading to the degree of Bachelor of Science in Agriculture.

Students trained elsewhere than in the public schools can be admitted:

(a) By certificate.

(b) By examination covering the subjects for which credit is claimed, whether for admission or advanced standing.

Candidates for advanced standing in any course will be given credit for such subjects as they satisfy the faculty, by certificate or by examination, that they have completed elsewhere, though the college will not graduate any student who has not spent at least one school year in residence. No instruction given elsewhere is likely to prepare a student to complete either course in less than three years.

*The Six-year Course***First year:**

Practical farm and shop work and  
Economics.  
Mathematics III.  
Modern Language I.  
Plant Anatomy I.  
Military Drill.

**Second year:**

Agricultural Zoölogy.  
Physics.  
Accounting.  
Modern Language II.  
Military Drill.

**Third year:**

Chemistry I.  
Plant Physiology II.  
Agronomy I.  
English III (optional).

**Fourth year:**

Chemistry II.  
Rural Engineering I.  
Agronomy II.  
Animal Husbandry I.

**Fifth year:**

Entomology or Plant Pathology I.  
Agronomy III.  
Elective.  
Thesis (preliminary).

**Sixth year:**

Thesis.  
Elective.  
Agronomy IV or V.

Every course in the College of Agriculture carries one unit of credit in this college, which is understood to represent a lecture or recitation of 55 minutes daily throughout the college year, or at least two hours of laboratory or field work, in lieu of the one hour in class room. In individual courses, more than this amount of time is required, as in Botany I, which takes ten hours of laboratory work and three lectures weekly, or Agronomy II, which, during a part of the year, requires in effect fully three hours of field work a day and two lectures weekly. In all cases, the requirement is that the work be done, and the time consumed is a minor consideration.

The University Council, with the approval of the Board of Regents, has decided "That every male student entering the University of the Philippines shall be required to take infantry drill for two periods per week of one hour each during the first two years of residence unless excused therefrom because of physical disability or other valid reason by an Exempting Board to be appointed by the President."

Any course given in the college, and not required, may be presented as an elective. Besides the courses described in the following pages, two years of Spanish may be elected; but credit by examination in Spanish will not be given in excess of the time that the subject has been studied regularly elsewhere. At least one elective must be in practical science.

Each candidate for graduation must present a thesis, representing a year's work in one subject, and counting as one elective credit; at least one regular elective must be chosen in the department in which the thesis is prepared. Most of the theses are prepared upon subjects relating to agronomy.



## COURSES OF INSTRUCTION

## ENGLISH

Miss YULE and Mrs. GILLIS.

*English I.*—The purpose of this course is to give the student a ready and accurate use of written and spoken English. To this end special emphasis will be laid upon theme work, talks, conversation, and reading. Two special themes required. Textbook, Brewer's Oral English.

[Miss YULE and Mrs. GILLIS.

*English II.*—A continuation of Course I with themes and talks of more formal nature. Special attention given to presentation of technical subjects and to formal discussions. Four special themes required. Textbook, Brewer's Oral English. Prerequisite, English I.

[Miss YULE and Mrs. GILLIS.

*English III.*—In oral work, a continuation of Courses I and II in practice in formal explanations, discussions, and addresses on various topics.

In written work, reports on assigned reading on technical subjects, current topics etc. Six special themes required. Prerequisite, English I and II or completion of four year's High School Course. The Dean is authorized to require that English III be taken as an elective by students whose use of English seems notably defective.

In each of the three courses the subjects for talks, themes etc. will be matters of interest in agriculture and industrial economics.

Miss YULE.

## MODERN LANGUAGES

At present we are without any provision for the teaching of German, French, or Spanish. Therefore modern language requirements within the college are confined to English.

## MATHEMATICS

Mr. SANTOS and Mr. ALBANO.

Students entering in 1918 and afterwards, will not be given the Mathematics I or II of this catalogue; Mathematics III will be given to such students in their first year and will consist of one semester of algebra and one semester of trigonometry and its application to Surveying.

*Mathematics I. Elementary Algebra.*—Will not be given in 1918-1919.

[Mr. SANTOS and student assistants.

*Mathematics II. Plane Geometry.*—Offered to students of the College who have finished Mathematics I.

[Mr. ALBANO.]

*Mathematics III. Algebra and Trigonometry.*—This part of algebra consists in the study of the theory of exponents, radical quantities and equations, quadratic equations, ratio and proportion. The second half comprises plane trigonometry and elementary surveying. The students are required to become familiar with the use of the compass, tape, transit, and level, and able to measure and plat a field.

[First year. Mr. SANTOS.]

### PHYSICS

Professor CUZNER.

Lectures, demonstrations, and practical experiments with special stress on the application of physical principles to agricultural practice.

[Second year. Professor CUZNER.]

Professor CUZNER.

*Agricultural Engineering I.*—This course is expected to prepare the students to perform ordinary farm engineering without recourse to expert engineers. It includes surveying, irrigation, roads, farm buildings, and farm machinery. Work in surveying and irrigation is carried through the year. Road and bridge construction is taught during the first semester, and instruction is given on buildings and machinery during the latter part of the year. The Philippine irrigation and road laws are studied in detail.

[Fourth year. Professor CUZNER.]

*Agricultural Engineering II.*—An advanced course in farm, sugar, and rice machinery and simple forms of engines and pumps. Not given at present.

[Elective. Professor CUZNER.]

### ELEMENTARY FARM PRACTICE

Shop work with wood and iron; field work as outlined under the Department of Agronomy (*c*), (*d*), (*e*), (*f*), and (*h*). Judging of rice and maize. Throughout the first two years in alternation with Rural Economics and Accounting. According to their nature, the practical exercises included in this course will be under the direction of either the Department of Agronomy or the Department of Agricultural Engineering.

**RURAL ECONOMICS AND ACCOUNTING**

Mr. RAYMUNDO and Mr. DACANAY.

The fundamental principles of economics with constant and particular application to rural Philippine conditions; bookkeeping as it should be practised on the Philippine farm. This and the preceding course are required throughout the first two years of both the six year and the four year courses. The work will be given to sections as small as the number of assistants permits, the work in Economics and in various of the practical exercises running at the same time and constantly. Temporarily suspended.

**CHEMISTRY**

Associate Professor ASHTON, Assistant Professor ROXAS, Mr. MONTELLANO, and Mr. QUISUMBING.

The Department of Chemistry occupies the first laboratory built for the College, which originally housed chemistry, botany, physics, and agricultural engineering. There is space for 108 students in Chemistry I and a total of almost as many more advanced students. As a result of the war and the scarcity of shipping, the laboratory is at present badly equipped with some of the materials most needed for elementary and general work.

The courses of study are arranged with the idea of training farmers, and hence emphasis is laid upon the relations of chemistry to the daily life of the student and his family and to agriculture. Particular attention is paid to agricultural analyses and their interpretation, and general agricultural chemistry is given in the last part of Course II. A constant drill in chemical arithmetic is kept up during the two years, both for the training of the student and for emphasizing and applying his knowledge of chemistry.

Chemistry III is the application of Chemistry in the study of soils and fertilizers, the aim being to enable the student to "diagnose" a soil and "prescribe" treatment for it, as a physician does for his patient.

The course in Chemistry IV is designed to furnish a training in sugar chemistry, in order to meet the growing demand for men capable of handling small sugar mills. It includes a preliminary course in general organic chemistry and a study of the chemistry of sugars, sugar analysis, and a more detailed study of the chemical control of the sugar central. Chemistry I and Chemistry II are prerequisite to this course, but Students electing it should also take Chemistry III.

The course in Biological Chemistry, Chemistry V, is also optional, and may be taken for elective credit. It is a study of the chemistry of the most important compounds found in plants and animals and of animal nutrition. Completion of courses I and II is prerequisite to admission.

The Department feels that it is now prepared to offer facilities for research work to students of graduate standing and such work will be credited in amounts of one unit and up depending upon the amount and quality of the work submitted. This will be given under Chemistry IX.

*Chemistry I.*—Lectures, recitations, and laboratory work in general chemistry, with a brief study of organic chemistry and some qualitative analysis.

*Chemistry Ia.*—Second semester and summer. A repetition of Chemistry I for those students who have failed or are conditioned in Chemistry I and who desire to bring their work up to schedule. Offered only when the number of students and the facilities of the department warrant.

Textbook: MacPherson & Henderson General Chemistry and Laboratory Manual for same.

[Third year. Associate Professor ASHTON and Mr. MONTELLANO.

*Chemistry II.*—Lectures, recitations, and laboratory work in qualitative, quantitative, and organic analysis, with special reference to the analysis of agricultural products and fertilizer compounds. The course includes lectures, recitations, and laboratory work in general agricultural chemistry given during the last three months of the year. Textbooks: A. A. Noyes, Qualitative Chemical Analysis; H. P. Talbot, Quantitative Chemical Analysis.

[Fourth year. Assistant Professor ROXAS and Mr. QUISUMBING.

*Chemistry III.*—Lectures, recitations collateral reading and laboratory work on the chemistry of soil and fertilizers. Elective, but required of those students electing to major in Sugar chemistry.

[Associate Professor ASHTON.

*Chemistry IV.*—(a) Lectures, recitations and laboratory work in general organic chemistry, with special reference to the study of the properties and structure of the most important compounds found in plants and animals.

(b) Lectures, recitations, and laboratory work in sugar analysis. The following are studied in this course: Densimetric, volumetric, and optometric methods of sugar analysis, including the study of the construction and uses of the hydrometer.

refractometer, polariscope and saccharimeter, and the application of sugar analysis to the control of sugar houses. The laboratory work includes control work in a sugar factory, whenever arrangement may make this possible. Elective.

[Assistant Professor ROXAS.

*Chemistry V.*—(a) Same as Chemistry IVa—Chemistry IVa and Chemistry Va will be given in one section in 1918–19.

(b) Lectures, recitations, collateral reading on the chemistry of animal nutrition and laboratory work in biological chemical analysis. Elective.

[Assistant Professor ROXAS.

*Chemistry IX. Research.*—The facilities of the department including the advice and help of its faculty will be placed at the disposition of students of graduate standing, desiring to pursue research work along lines of chemistry applicable to agriculture.

Associate Professor ASHTON.  
Assistant Professor ROXAS.

*Chemistry X. Thesis.*—This course is open not only to those interested primarily in chemistry, but to those students in other departments who elect to prepare a thesis on the chemical side of their problems.

Associate Professor ASHTON.  
Assistant Professor ROXAS.

## ENTOMOLOGY AND ZOÖLOGY

Professor BANKS and Mr. UICHANCO.

The Department of Entomology occupies the rear wing of the Agronomy Building and has also an insectary and silk house, with complete facilities for sericulture. The entomological collection and library of the Government built up and formerly in charge of the Bureau of Science have been transferred to the College of Agriculture and are available for purposes of advanced study. The total collection at the college now occupies more than 3,700 Schmidt boxes. The materials for the study of entomology are now unrivaled in the Orient. Beside the local staff, foreign entomologists are constantly at work here to the very great advantage of those engaged in local investigation.

*Agricultural Zoölogy I.*—An elementary course on structure, classification, and life histories to prepare the student for work in economic entomology and animal husbandry. Textbook: Linville and Kelly's General Text-book of Zoölogy.

[Second year. Professor BANKS and Mr. UICHANCO.

*Economic Entomology II.*—A general course, designed to familiarize students with the morphology, biology, taxonomy, and economic aspects of insects. Special attention is given to the biology of injurious and beneficial species. The principal insect pests of the Philippine garden, farm, field, forest, and orchard, together with those affecting man and domestic animals, as well as insecticides and the control of insects by natural parasites are studied. The general principles of sericulture are taught in this class.

Textbooks: Folsom, *Entomology with Reference to its Biological and Economic Aspects*; Comstock, *Manual for the Study of Insects*; Sanderson and Jackson, *Elementary Entomology*.

[Fifth year. Professor BANKS and Mr. UICHANCO.

*Entomology IX. Research.*—This course is offered to those who desire to do graduate work in Entomology and to specialize as teachers, agricultural or sanitation experts, or as sericulturists.

[Elective. Professor BANKS.

*Entomology X. Thesis.*—Students electing to prepare a thesis in this department are allowed to take a simple practical problem in entomology with special reference to its bearing on Philippine agriculture.

## PLANT PATHOLOGY

Associate Professor REINKING.

*Plant Pathology I.*—A study of the fungus and bacterial diseases of plants, including their symptoms, causal organism and control. Lectures and laboratory work, taking up the principal fungus pests of Philippine crops; the technique of pure culture and inoculation; life histories of fungi, and the preparation and application of fungicides.

Plant Pathology I may, with the Dean's approval, be substituted for Entomology II as a required subject. With the approval of the Professor of Agronomy and the Dean, Plant Pathology I may be accepted in the place of the required elective in Agronomy in the case of students preparing a thesis in the latter department.

*Plant Pathology IX.*—Research.

*Plant Pathology X.*—Students electing to prepare a thesis in this department, are allowed to take a simple practical problem in plant pathology with special reference to its bearing on Philippine agriculture.

Associate Professor REINKING.

## ANIMAL HUSBANDRY

Assistant Professor GONZALEZ and Mr. VILLEGAS.

The college has a concrete building which furnishes office and classroom for the present needs of the department of Animal Husbandry. It has a bodega and small stable, and a sufficient number of hog lots to permit the conducting of pasture experiments in pork production. There are four permanent chicken houses with yards, and a concrete floor with pens for the growing of young chicks. The area used for growing forage and pasture crops is about 12 hectares. The college has work cattle, carabao, Berkshire and native hogs, a number of flocks of different breeds of chickens, and a small herd of goats.

*Animal Husbandry I. Elements of Animal Husbandry.*—The work in this course deals mainly with the relation of type to usefulness, taking up score card work, comparison, and competitive judging of the Philippine pony, the carabao, oxen or work cattle, and hogs; herd management, including feeding, breeding, common diseases and the prevention and control of epizootics; butchering, preparing meat for market, and preservation. Beef and dairy cattle and goats are taken up in lectures only. A portion of the year is devoted entirely to the study of poultry raising. Trips are taken during the year to centers of animal industry. Prerequisite, General Zoölogy.

Textbooks: Gay, The Principles and Practice of Judging Live Stock; Lippincott, Poultry Production.

[Fourth year.

Assistant Professor GONZALEZ.  
Mr. VILLEGAS.

*Animal Husbandry II.*—The work in this course falls under three heads:

First. Principles of animal nutrition. The study of feeds, the compounding of rations, and methods of feeding for economical production.

Second. The principles underlying constructive breeding and practical methods of breeding for improvement.

Third. Veterinary physiology and diseases; live stock sanitation; the diagnosis and treatment of common ailments, and simple surgical operations. Prerequisite, Animal Husbandry I and Chemistry I.

Textbooks: Henry & Morrison, Feeds and Feeding; Harper, Breeding of Farm Animals; U. S. D. A. Diseases of the Horse. (Elective.)

*Animal Husbandry X.*—Thesis.

Assistant Professor GONZALEZ.

Assistant Professor GONZALEZ.

## PLANT PHYSIOLOGY

Associate Professor McLEAN, Assistant Professor TRELEASE, Mr. ESPINO, and Mr. OCFEMIA.

The department of plant physiology has for class work a laboratory for plant physiology seating seventy students, and uses for the work of the first year the hall intended for a general reading room. It has a compound microscope for each student and the other usual equipment for elementary botanical work; a cathetometer, clinostats, auxanometers, transpiration machines, and other ordinary physiological apparatus; solid concrete tables for precision work; a large collection of fungi; and a mounted herbarium of about 11,000 sheets.

Of more value for plant studies than the indoor equipment is the environment of the college. From the lake to the mossy forest on the summit of Maquiling, every great tropical formation, except the mangrove and the Alpine scrub, is present within convenient reach. Aside from the large number of introduced plants on the campus, there is an extraordinarily large local flora; and this vegetation never rests. A large series of subjects is constantly drawn from the plants grown on the college farms.

*Plant Anatomy I.*—This course includes the anatomy, histology, and relationship of the most important crop producing plants. Aside from the regular laboratory work and lectures, instruction is given in the collection, preparation, and determination of vascular plants having economic value, and each student must present an herbarium. Familiarity with local ecology is acquired by frequent field trips. The lectures covering this course are multigraphed and serve as a text.

[First year. Assistant Professor TRELEASE and Mr. OCFEMIA.

*Elementary Plant Physiology II.*—Lectures and collateral reading on growth, nutrition, plant metabolism, irritability, and reproduction, with laboratory work chiefly on growth and nutrition. The course of instruction follows Pfeffer's Physiology of Plants and Barnes' Plant Physiology. Individual garden plots, kept by the students, furnish a part of the material for study and for practice in making records of cultures. Prerequisite, Plant Anatomy, Physics.

[Second year. Associate Professor McLEAN.

*Plant Nutrition III.*—A thorough experimental study with collateral reading on the nutrition of plants; water, the ash constituents, nitrogen, photosynthesis, respiration, and better-known metabolic processes. Prerequisite, Chemistry II, Plant Physiology and Agronomy II. (Elective.)

Associate Professor McLEAN or Assistant Professor TRELEASE.



*Plant Studies IX.*—Research work covering special topics; morphology, physiology, ecology, or taxonomy of economic plants. The facilities of the college and the services of its staff are available to advanced students, or to others engaged in botanical investigation. According to the field, such work may be under the direction of Doctor McLean, or Doctor Trelease. Every facility will be given to visiting botanists desiring to become acquainted with tropical plant life or to carry on investigations here. (Elective).

Associate Professor MCLEAN.  
Assistant Professor TRELEASE.

*Plant Physiology X.*—*Thesis.*

#### AGRONOMY

Professor BAKER, Assistant Professor COCANNOUER, Assistant Professor ELAYDA, Mr. MIRASOL, and Assistants LUISTRO, VISTA, ALBANO, CLEMENTE, PANGANIBAN, and MENDIOLA.

The department of agronomy occupies part of the temporary building of the college, a separate Seed and Harvest Laboratory, one wing of the new Agronomy Building and a small office building which is also used as a class room and for tobacco and plant breeding work. It has under its direction the plant propagating house, the gardens, nurseries, orchards, and cultivated fields. It is provided with tools and implements for the work of the farm or the practice of the students, and such special apparatus as starch, and seed mills. There are now growing several thousand varieties and strains of plants of economic importance, on a scale ranging from a few individuals to plots of several hectares.

The practical training of the farmer is continuous throughout the course, except for the first year of the six-year course. Some of this training is given in other departments; as the use of garden tools in Plant Physiology II; the preparation and application of insecticides and the care of pumps in Entomology; and the general repair of implements, making of harrow teeth and plow shares, etc., in Agricultural Engineering. Operations incidental to the culture of particular crops are practiced when these crops are studied, as outlined in the description of courses below. Students are given instruction and practice at various times during the course, in:

- (a) Farm management.
- (b) The handling of labor.

Other practical work is distributed through the courses in Agronomy, as follows:

- (c) Work with hoe, rake, spade, and fork; cleaning of garden

paths, drives and walks; preparation of beds. (d) Work with Planet Junior hand tools. (Credit for (c) and (d) may be obtained in Plant Physiology II.) (e) Sharpening of all small edged tools. (f) Oiling, cleaning, and care of machine tools, including lawn mowers. (g) Preparation and handling of seed beds; pricking out of young plant in nursery beds and flats; setting out young plants. (h) Plowing, from the use of small plows with single animals to heavy moldboard and disk plows. (i) Machine harrowing, marking, and cultivating. (j) Broadcasting and planting with machine planters. (k) Harvesting and cleaning seed. (l) Management of compost and manure heaps. (m) Marcottage and making of cuttings and layers. (n) Mixing, and hand and machine application of fertilizers. (o) Planting young trees and moving older ones. (p) Tree and shrub pruning. (q) Budding and grafting, including preparation of wax and tape. (r) Seed grading and selection. (s) Production of inbred, crossbred, and hybrid seed.

*Agronomy I. Principles of Agriculture.*—This course takes up climate and its relation to agriculture; the soil, its origin and structure, and methods of management and improvement; propagation of plants; pruning, and sanitation. The lectures cover also the marketing of farm produce, and farm policy and management. Thorough work is given on maize and the forage crops of the Philippines. Students in this course are required to become familiar with agricultural implements and their use, and are given practice in propagating plants by seed, cutting, grafting, and budding.

[Third year.  
Assistant Professor COCANNOUR.

*Agronomy II. The Coconut and Fiber Plants.*—More than half of the year is devoted to the study of the coconut, covering as much of its physiology as has direct agricultural value; its diseases and their treatment; all steps in its proper cultivation, harvesting, and preparation for market, in the Philippines and elsewhere; and the uses and value of the products. The college has more than 1,000 trees of various ages and makes extensive use of commercial plantations existing in the provinces of Laguna and Tayabas. The fiber plants are studied in the same way, but more briefly, especial attention being given to abacá. Prerequisite, Botany II and Chemistry I.

[Fourth year. Mr. VISTA and Mr. ALBANO.

*Agronomy III. Tropical Farm Crops.*—Sugar, tobacco, coffee, rubber, and some minor tropical crops will be taken up in succession, the treatment of each being similar to that of the coconut

during the preceding year, but with more attention to selection and breeding.

[Fifth year. Mr. MIRASOL and Mr. LUISTRO.]

*Agronomy IV. Horticulture.*—Completion of the two following semestral courses is required for credit:

(a) *Gardening.*—A study of home, commercial, and school gardening. The garden crops are taken up collectively and studied with regard to their history, amelioration, sources of seed, cultivation, and marketing. Extensive practical work is required of every student. A trip is made by each class to the commercial gardens in and about Manila, where a careful study is made of methods and results.

(b) *Pomology and Nursery Propagation.*—A thorough study is made of the local tropical fruits and of promising introduced fruits, with especial emphasis in methods of amelioration, propagation, and orchard management. Every student is required to do work in budding and grafting. (Elective).

Assistant Professor COCANNOUR.

*Agronomy V. Plant Breeding.*—A study of the fundamental principles of plant breeding with full discussion of recent investigations and results. Abundant opportunities are offered for practical field work with tropical crops, especially with rice, corn, and tobacco.

[Elective. Professor BAKER.]

*Agronomy X. Research.*—The facilities of the department will be placed freely at the disposition of persons qualified to use them in investigations likely to promote the knowledge of tropical agronomy. Students choosing to present theses in this subject may select some minor crop, or some problem relating to a major one.

Professor BAKER.

#### THE FOUR-YEAR COURSE

The requirements in this course are:

*For admission.*—The completion of the high-school course, or its equivalent, including botany. (See p. 257.) If Botany or Mathematics III, Trigonometry, and Surveying is not presented for admission, the course in Plant Anatomy I or Mathematics III (see p. 260) must be taken without credit.

*For graduation.*—(a) A business knowledge of the Spanish language, and one year of general zoölogy. These requirements may be satisfied before or after admission to the college.

(b) Completion of the following courses: Elementary Farm Practice, Carpentry, Blacksmithing; Rural Economics; Farm Management and Accounting; Elementary Plant Physiology 2;

Agronomy 1, 2, 3, and 4 or 5; Rural Engineering 1; Chemistry 1 and 2; Economic Entomology; Animal Husbandry 1.

(c) Completion of two electives based on required courses.

(d) Presentation of a thesis representing a year's work on some agricultural problem.

For explanation of these courses, see the preceding pages. The following outline of the course is based on the assumption that the requirements in zoölogy are not satisfied before admission:

First year:	Third year:
Plant Physiology II.	Agronomy II.
Farm Practice and Carpentry.	Rural Engineering 1.
Rural Economics.	Agronomy III.
Chemistry I.	Animal Husbandry 1.
Agricultural Zoölogy.	Fourth year:
Military Drill.	Agronomy 4 or 5.
Second year:	Elective.
Agronomy I.	Elective.
Rural Accounting, Farm Management, and Blacksmithing.	Thesis.
Chemistry II.	
Entomology.	
Military Drill.	

Total enrollment of students in the College of Agriculture during the academic year 1917-18, 564.

THE UNIVERSITY OF THE PHILIPPINES

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THE COLLEGE OF VETERINARY SCIENCE

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EIGHTH ANNUAL ANNOUNCEMENT AND CATALOGUE



## Faculty of College of Veterinary Science

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IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

WILLIAM HUTCHINS BOYNTON, D. V. M.,  
Dean of the College of Veterinary Science, Professor of Pathology and Bacteriology.

EUSTACE S. D. MERCHANT, D. V. M.,  
Professor of Veterinary Medicine.

VICTOR BUENCAMINO, D. V. M.,  
Associate Professor of Veterinary Surgery and Obstetrics.

DAVID C. KRETZER, D. V. S., M. D., M. D. V.,  
Assistant Professor of Veterinary Physiology.

ANGEL K. GOMEZ, D. V. M.,  
Instructor in Veterinary Anatomy.

GREGORIO SAN AGUSTIN, D. V. M.,<sup>1</sup>  
Instructor in Veterinary Anatomy.

MANUEL D. SUMULONG, D. V. M.,  
Instructor in Veterinary Anatomy.

### LECTURERS ON SPECIAL TOPICS

STANTON YOUNGBERG, D. V. M.,<sup>2</sup>  
Chief Veterinarian, Professorial Lecturer on Veterinary Jurisprudence.

ALONZON S. SHEALY, D. V. M.,<sup>2</sup>  
Professorial Lecturer on Animal Husbandry.

GODFREY F. TOTTMAN, M. D. C.,<sup>2</sup>  
Professorial Lecturer on Meat Inspection.

(For instruction in pathology and bacteriology, physiology, and medical entomology, see Faculty, College of Medicine and Surgery; chemistry, physics, mathematics, and botany, Faculty, College of Liberal Arts; pharmacy, Faculty, School of Pharmacy.)

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<sup>1</sup> Taking post graduate in U. S. A.

<sup>2</sup> From the staff of the Bureau of Agriculture, Government of the Philippine Islands.





# THE COLLEGE OF VETERINARY SCIENCE

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## HISTORY

The College of Veterinary Science derives its origin from the Act founding the University of the Philippines, enacted June 18, 1908, by the First Philippine Legislature, in special session. The first session of the college began in June, 1910.

## OBJECTS OF THE INSTITUTION

The enormous losses in the Philippine Islands from diseases of live stock prove the necessity of having educated men to cope with the exceptional difficulties encountered in fighting these diseases. A century ago Europe was stimulated by the ravages of rinderpest to establish the first veterinary colleges enjoying Government aid. The same force has now been exerted in the Philippine Islands. The prosperity of these Islands is dependent upon the prosperity of agriculture, and this in turn is conditional upon the presence of a large body of well-trained men capable of coping with the problem of animal diseases.

While rinderpest, a disease of bovines, is now occupying special attention, the combating of surra in horses is of no less importance, and nowhere in the world are there more opportunities for a comparative study of the various diseases of live stock. At present there are few graduate Filipino veterinarians and but few private practitioners of veterinary medicine in the Islands.

The First Philippine Legislature displayed wise foresight in providing opportunity for Filipinos to become trained in a profession having a vital relation to the prosperity of the country.

## LOCATION AND BUILDINGS

The buildings of the college of veterinary science are located at the corner of Tayuman Street and Rizal Avenue, adjoining the San Lazaro Hospital. The group consists of a two-story building containing the faculty offices, classrooms, and anatomical laboratory; large sheds containing single and box stalls;

and a large roomy building containing an operating table and a set of stocks for operating on large animals, together with a small building for use in the small animal clinic. In addition to these buildings there is a small building, properly screened, in which cases of an infectious nature are kept. Additional laboratory instruction in the allied sciences is given at the College of Medicine and Surgery.

#### ENTRANCE REQUIREMENTS

Candidates for admission to this college must comply with the entrance requirements of the University of the Philippines.

#### EXAMINATIONS

At the end of each semester, or upon the completion of each subject, there will be an examination, and examinations will be held at such other times during the semester as the instructor of any course may deem necessary.

Promotion from one class to another shall be dependent on the vote of the faculty.

#### SCHOLARSHIPS

Twenty scholarships in the College of Veterinary Science were established by Act No. 2302 of the Third Philippine Legislature.

In addition to the above there are several municipal and provincial scholarships available to students in the College of Veterinary Science as well as two made possible through the generosity of Mr. Mariano Limjap.

#### REGISTRATION AND RESIDENCE

The college year is nine months long and is divided into two semesters.

All students must comply with the registration requirements of the University of the Philippines as outlined on page 34.

Residence in Manila is required of all students, and any change in address must be reported at the office of the Dean.

#### REQUIREMENTS FOR GRADUATION

In order to receive the degree of Doctor of Veterinary Medicine (D. V. M.), the candidates must have successfully completed the prescribed five-year course to the satisfaction of the faculty, and must be recommended to the Board of Regents by the University Council.

*Outline of courses***FIRST YEAR**

First semester :	Units.	Second semester :	Units.
Chemistry 1A.....	3	Chemistry 1A.....	3
English 1C.....	3	English 1C.....	3
Zoology 1A.....	3	Zoology 1A.....	3
Mathematics 3.....	3	Botany 1.....	3
Anatomy (V. S. 1A).....	3	Anatomy (V. S. 1B).....	5
Histology.....	3	Embryology.....	3
<b>Total</b> .....	<b>18</b>	<b>Total</b> .....	<b>20</b>

**SECOND YEAR**

First semester :	Units.	Second semester :	Units.
Chemistry 2.....	3	Chemistry 2.....	3
Spanish 1.....	3	Spanish 1.....	3
Anatomy (V. S. 2A).....	5	Anatomy (V. S. 2B).....	5
Animal Husbandry (V. S. 43).....	3	Animal Husbandry (V. S. 43).....	3
Veterinary Physiology (V. S. 40).....	2	Veterinary Physiology (V. S. 40).....	2
Physics 2.....	3	Physics 2.....	3
<b>Total</b> .....	<b>19</b>	<b>Total</b> .....	<b>19</b>

**THIRD YEAR**

First semester :	Units.	Second semester :	Units.
Anatomy (V. S. 3).....	5	Horse Shoeing (V. S. 25).....	2
Materia Medica and Veterinary Pharmacy 3A.....	2	Bacteriology.....	5
Preventive Medicine (V. S. 33).....	1	Preventive Medicine (V. S. 33).....	1
Physiology 3.....	3	Diseases of Small Animals (V. S. 12).....	2
Materia Medica (V. S. 26).....	2	Jurisprudence (V. S. 35).....	2
Veterinary Helminthology (V. S. 44).....	1	Materia Medica (V. S. 26).....	2
Spanish 2 (Optional).....	3	Ophthalmology (V. S. 23).....	1
<b>Total</b> .....	<b>14</b>	Veterinary Botany (V. S. 45).....	3
		Spanish 2 (Optional).....	3
		<b>Total</b> .....	<b>17</b>

Summer vacation period between third and fourth years. Two months of field and quarantine practice.

**FOURTH YEAR**

First semester :	Units.	Second semester :	Units.
General Surgery (V. S. 11).....	2	Obstetrics (V. S. 13).....	4
Theory and Practice of Medicine (V. S. 21).....	5	Theory and Practice of Medicine (V. S. 21).....	5
Clinical Diagnostics (V. S. 24).....	2	Clinical Diagnostics (V. S. 24).....	2
Clinics (V. S. 39).....	5	Clinics (V. S. 39).....	5
General Pathology.....	6	General Surgery (V. S. 11).....	2
<b>Total</b> .....	<b>20</b>	<b>Total</b> .....	<b>18</b>

Summer vacation period between fourth and fifth years. Three months of field and quarantine practice.

**FIFTH YEAR**

First semester :	Units.	Second semester :	Units.
Regional Surgery (V. S. 14).....	2	Regional Surgery (V. S. 14).....	2
Surgical Exercises (V. S. 15).....	1	Surgical Exercises (V. S. 15).....	1
Theory and Practice of Medicine (V. S. 22).....	5	Theory and Practice of Medicine (V. S. 22).....	5
Special Pathology (V. S. 31).....	2	Clinics (V. S. 39).....	5
Clinics (V. S. 39).....	5	Meat Inspection (V. S. 32).....	2
Milk Inspection (V. S. 34).....	2	Infectious Diseases (V. S. 41).....	2
Veterinary Entomology (V. S. 37).....	2	Haematology (V. S. 42).....	1
<b>Total</b> .....	<b>19</b>	<b>Total</b> .....	<b>18</b>

## COURSES OF INSTRUCTION

## VETERINARY SCIENCE.

Professor BOYNTON, Chief of Department; Professor MERCHANT, Associate Professor BUENCAMINO; Assistant Professor KRETZER; Doctors SAN AGUSTIN, SUMULONG, SHEALY, TOTTMAN, and YOUNGBERG.

*Veterinary Science 1. Section A. Osteology.*—General consideration of the structure, properties, development, and classification of bones. Description of the individual bones of the horse in detail, followed by comparative description of those of the ox, carabao, pig, and dog. Laboratory work consists of drawings made to scale, of the bones of the horse which the instructor may direct. Lectures and recitations.

[9 hours a week; 3 units; first semester. Doctors SAN AGUSTIN and SUMULONG.

*Section B. Myology and Arthrology.*—Lectures and dissections. In dissections, students are required to demonstrate and describe to the instructor the muscles and articulations dissected. Special attention is given to the anatomical structure and movements of joints.

[11 hours, 5 units; first year; second semester. Doctors SAN AGUSTIN and SUMULONG.

*Veterinary Science 2. Section A. Splanchnology, Angiology, Neurology.*—Dissection of the digestive, urogenital, respiratory circulatory, and nervous systems of the horse. During laboratory hours, students are required to explain to the instructor the region dissected.

[11 hours a week; 5 units; second year; first semester. Doctors SAN AGUSTIN and SUMULONG.

*Section B. Comparative Anatomy.*—Dissection of the ox or carabao, pig, sheep or goat, and dog. Special emphasis is placed on the digestive, respiratory, circulatory, and urogenital systems, bringing out the anatomical peculiarities of clinical and surgical importance.

[11 hours a week; 5 units; second year; second semester. Doctors SAN AGUSTIN and SUMULONG.

*Veterinary Science 3. Esthesiology and Surgical Anatomy.*—Dissection of the special sense organs, and the foot, of the horse and other domestic animals. The surgical anatomy of the various regions of the body will be considered in lectures and practical demonstrations in the living subject.

[11 hours a week; 5 units; second year; first semester. Doctors SAN AGUSTIN and SUMULONG.

The course is designed to give the students of the College of Veterinary Science a knowledge of Veterinary Anatomy in the most practical manner possible, emphasising those parts which bear important relations to Surgery and Clinics. Preserved specimens with coloring matter injected into the blood vessels are used in dissection.

Textbooks: Sisson's Veterinary Anatomy; Chauveau's Comparative Anatomy of the Domesticated Animals.

*Veterinary Science 11. General Surgery.*—Textbook: Udall's translation of Frohner's General Surgery. Recitations. Fourth year, first and second semesters, four times a week. General surgery intends to impart a general knowledge of the principles of surgery, surgical pathology, therapeutics, and operative technic.

[4 hours, first and second semesters; 4 units. Associate Professor BUENCAMINO.

*Veterinary Science 12. Diseases of Small Animals.*—Lectures and practical exercises. Third year, second semester, two times a week. Diseases of small animals deals principally with canine and feline diseases along with surgical exercises. Two lectures a week supplemented with surgical exercises.

[2 hours, second semester; 2 units. Professor MERCHANT.

*Veterinary Science 13. Obstetrics.*—Textbook: Veterinary Obstetrics by W. L. Williams. Recitations. Fourth year, second semester, four times a week.

It is intended to have a strong skeleton where an artificial uterus will be fixed. Newly born calves will be procured, killed and so placed in the artificial uterus that the various corrections of position and embryotomic operations are carried out by the students under the direction of the instructor in charge.

[2 hours, on entire year; 4 units. Professor MERCHANT.

*Veterinary Science 14. Regional Surgery.*—Textbook: Regional Veterinary Surgery, by Moller and Dollar. Recitations Fifth year, twice a week, throughout the year. This course is devoted to the surgery of the various regions of the body.

[2 hours throughout the year; 4 units. Associate Professor BUENCAMINO.

*Veterinary Science 15. Surgical Exercises.*—Textbook: Surgical and Obstetrical Operation, by W. L. Williams. Laboratory exercises. Fifth year, first and second semester, once a week.

The course in surgical exercises comprises one period of five hours once a week in which the student is required to perform all the important operations on anesthetized animals which are destroyed at the close of each exercise.

[5 hours, first and second semesters; 2 units. Associate Professor BUENCAMINO.

*Veterinary Science 21. Theory and Practice of Medicine.*—Lectures and recitations with clinical demonstrations. Required for fourth-year veterinary students.

[5 hours throughout the year; 10 units. Professor MERCHANT

*Veterinary Science 22. Theory and Practice of Medicine.*—Lectures and recitations with clinical demonstrations. Required for fifth-year veterinary students.

[5 hours throughout the year; 19 units. Professor MERCHANT.

The course in theory and practice of medicine extends over the fourth and fifth year. The fourth year is devoted to the constitutional, dietetic, and noninfectious diseases of the digestive, respiratory, and nervous systems, and the common integuments. The fifth year includes a detailed study of the infectious diseases, the diseases of the blood vascular system, the genito-urinary system, and sanitary police.

*Veterinary Science 23. Ophthalmology.*—Lectures and recitations. Required for third-year students.

[1 hour throughout the second semester; 1 unit. Professor MERCHANT.

The course in ophthalmology is given as a supplement to Courses 21 and 22. It includes a consideration of the anatomical and physiological structures of the eyes and the treatment of the various pathological conditions that commonly occur. The student is instructed in the use of the ophthalmoscope and the manipulation of the eye.

*Veterinary Science 24. Clinical Diagnostics.*—Lectures and clinical demonstrations. Required for fourth-year veterinary students.

[2 hours throughout the year; 4 units. Associate Professor BUENCAMINO.

The course in clinical diagnostics consists of a systematic study of the methods of diagnosis and symptoms of diseases in all the various groups of organs, and a practical application of the same is made on the various species of domestic animals.

*Veterinary Science 25. Horse Shoeing.*—Lectures, recitations, and practical demonstrations. Required for third-year veterinary students.

[2 hours throughout the second semester; 2 units. Associate Professor BUENCAMINO.

The course consists of a careful study of the anatomical, physiological, and pathological conditions of the foot, special attention being given to the various forms of shoes, their construction, and indications, in an attempt to cure pathological conditions of the foot and to correct faulty gaits.

*Veterinary Science 26 and 27. Materia Medica and Veterinary Therapeutics.*—These subjects are given to the third class. In the study of materia medica the properties of drugs their official names, synonyms, sources, physical characters, and incompatibilities are considered.

In the study of veterinary therapeutics the drugs are grouped

according to their therapeutic indications or uses and defined before the representative members of the group are discussed, in detail, as to their physiologic action, toxicology, administration, indications and contraindications, are considered from a therapeutic standpoint also, exercises in and the essentials of, prescription writing.

Two hours a week, consisting of lectures and quizzes, are given to these subjects.

[2 hours a week; 2 units. Assistant Professor KRETZER.

*Veterinary Science 31. Special Pathology.*—Lectures and laboratory. Required for fifth-year veterinary students.

[6 hours throughout first semester; 2 units. Dean BOYNTON.

This course consists of a study of the microscopical and macroscopical lesions of the chief infectious diseases.

*Veterinary Science 32. Meat Inspection.*—Lectures and laboratory. Required for fifth-year veterinary students.

[4 hours throughout second semester; 2 units. Dr. TOTTMAN.

This course consists of a study of the laws and rules governing the meat industry of the Philippines, and a study of the methods used at the various slaughterhouses in and around Manila.

*Veterinary Science 33. Preventive Medicine.*—The lectures on Preventive Medicine comprise the measures applicable in the prevention of infectious diseases of animals. Special consideration is given to the methods of quarantine, disinfection, inoculation and immunization.

[1 hour throughout the year; 2 units. Dr. YOUNGBERG.

*Veterinary Science 34. Milk Inspection.*—Required of fifth-year veterinary students.

This course includes the physical examination of dairy cattle and a consideration of the sanitary and hygienic necessities requisite in the production of certified milk. It is given as a supplement to the courses in Physiological Chemistry and Bacteriology, where the chemical and Bacteriological phases of this question are considered.

[2 hours throughout the first semester; 2 units. Professor MERCHANT.

*Veterinary Science 40. Veterinary Physiology.*—This course is presented to the second year students and includes a study of the digestive organs of the body and the locomotor system including the static and kinetic function of joints, muscles, tendons and ligaments that are connected therewith, and the various phases of locomotion, as well as the physiology of the foot.

Two hours a week, consisting of lectures and quizzes, are given to this work.

[4 units. Assistant Professor KRETZER.

*Veterinary Science 35. Jurisprudence.*—Lectures and recitation consisting of the laws pertaining to contracts, cattle registration and branding. The student is also introduced to the subject of Professional Ethics.

[1 hour throughout the second semester; 1 unit. Doctor YOUNGBERG.

*Veterinary Science 37. Veterinary Entomology.*—Lectures and laboratory. Required for first-semester fifth-year students.

[6 hours throughout the first semester; 2 units. Professor BANKS.

*Veterinary Science 41. Infectious Diseases of Animals.*—Recitation and lecture. Textbook: The Pathology of Infectious Diseases of Animals, by V. A. Moore, prescribed for fifth-year veterinary students, second semester.

[2 hours throughout the second semester; 2 units. Dean BOYNTON.

*Veterinary Science 42. Haematology.*—Lectures and laboratory course, optional for fifth-year students. This course covers the technique of making blood examinations.

[3 hours throughout the second semester; 1 unit. Dean BOYNTON.

*Veterinary Science 39. Clinics.*—Required of fourth, and fifth-year students 2½ hours daily. Fourth-year students work as assistants to the seniors who diagnose and prescribe for cases received. This is afterwards corrected or approved by the instructor in charge.

In conjunction with the clinics there is maintained a pharmacy. One junior or senior student is assigned to be pharmacist for one week and is responsible for properly filling the approved prescriptions of senior students. In this manner students acquire an independence in the method of diagnosing, prescribing, and treating such cases as may arise.

Competent senior students are given opportunities to perform many of the operations under proper supervision, thus rendering them fit to perform operations with confidence and skill.

[15 hours each week throughout the year; 10 units.

Professor MERCHANT and Doctor SAN AGUSTIN.

#### ANIMAL HUSBANDRY

Dr. SHEALY.

*Veterinary Science 43. Animals Husbandry.*—This course is designed to meet the needs of the veterinarian in the Philippines.

Types and breeds of farm animals. The origin, development, adaptability, and characteristics of the leading breeds of farm stock and poultry will be studied by students and a limited



amount of score card work given. The chief object of this course is to demonstrate the relation of conformation to function in various types of farm animals. Students will be given practice in determining the age and weight of these animals. This work will be given in lectures and outdoor demonstrations.

Feeds and feeding: The elements of animal food and their uses; assimilation; composition of feeds, and compounding of rations.

Prescribed for students in the College of Veterinary Science (third year).

[3 hours, first semester; 3 hours, second semester; 6 units.

*Veterinary Science 44. Veterinary Helminthology.*—Consult Catalogue of the College of Liberal Arts.

*Veterinary Science 45. Veterinary Botany.*—Consult Catalogue of the College of Liberal Arts.

*Summary of enrollment in the College of Veterinary Science during the academic year 1917-18.*

Fifth year.....	7
Fourth year.....	2
Third year.....	7
Second year.....	10
First year.....	64
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Total .....	90



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THE UNIVERSITY OF THE PHILIPPINES

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THE COLLEGE OF ENGINEERING

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EIGHTH ANNUAL ANNOUNCEMENT AND CATALOGUE

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## **Faculty of the College of Engineering**

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IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

CLARENCE G. WRENTMORE, C. E.,  
Professor of Civil Engineering, Dean of the College of Engineering.

HERMAN WHITE REYNOLDS, M. E.,  
Professor of Mechanical Engineering and Electrical Engineering,  
and chief of the Departments.

JAMES REMUS WRIGHT, Ph. D.,  
Professor of Physics and Chief of the Department.

LAWRENCE EMERY GURNEY, Ph. D.,  
Professor of Mathematics and Chief of Department.

EDWIN LEROY DRIGGS, C. E.,  
Associate Professor of Engineering.

H. LAWRENCE NOBLE, M. A., LL. B.,  
Assistant Professor of Mathematics.

FERNANDO DE LA CANTERA, C. E.,  
Assistant Professor of Civil Engineering.

ALEXANDER FELIX SAMUELS, A. B.,  
Assistant Professor of Physics.

MARIANO JULIO SALAS, M. E., E. E.,  
Instructor in Mathematics.

AURELIO CORCUERA, C. E.,  
Instructor in Physics.

ISITA GIRDLER MORSE, B. A.,  
Instructor in Mathematics.

TEODATO MACABULOS, M. S. (C. E.),  
Assistant in Physics.

EMITERIO ROA, A. B.,  
Assistant in Mathematics.

TELESFORO TIENZO, A. B.,  
Assistant in Mathematics.

(For instruction in zoölogy, chemistry, geology, English and Spanish, see Faculty, College of Liberal Arts.)



# COLLEGE OF ENGINEERING

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## HISTORY AND GENERAL INFORMATION

The College of Engineering was opened and instruction in the first year of the civil engineering course was begun on June 13, 1910. Graduates of four-year high-school courses were admitted at that time to the first year of the civil engineering course, which course was to consist of five years of study.

On January 31, 1911, the Board of Regents decided to require two years of college work as a preparation for the engineering course, and changed the latter to consist of four years of professional studies.

While a six-year course will fit a student for the profession much better than one of five years, the demand for a shorter course has been so pronounced that on January 9, 1914, the Board of Regents adopted a course of five years, leading to the degree of B. S. in Civil Engineering on the completion of four years' work and of M. S. Civil Engineering upon completion of five years' work. At the same time the six-year course was rearranged so that the last three years in both courses would be identical.

On July 12, 1915, the Board of Regents authorized the adoption of courses in Mechanical, Electrical, and Mining Engineering. The granting of degrees in each of these courses follows the regulations already in effect governing the granting of degrees in the course in Civil Engineering. The four-year courses lead to the degree of B. S., and the five-year courses to the degree of M. S. in Mechanical, Electrical, or Mining Engineering. The prescribed work for all courses in engineering is the same for the first two years. A student, therefore, need not specify the course which he intends to follow until the beginning of the third year's work.

Students who desire to take six years for the course in Mechanical, Electrical, or Mining Engineering will be permitted to do so under the same regulations as those taking the six-year Civil Engineering Course.

Students taking the five-year course will be registered at once in the College of Engineering, while those taking the six-year

course will be registered for the first two years in the College of Liberal Arts, pursuing the course in Preparatory Engineering, and thereafter in the College of Engineering.

The additional year of the six-year course is devoted to broadening the student's foundation in cultural and general subjects, and the schedule for the first two years covers the requirements for the degree of B. A. In the six-year course, therefore, the student may obtain the degree of B. A. at the end of two years, of B. S. (in C. E., M. E., E. E., or Min.) at the end of five years, and of M. S. (in C. E., M. E., E. E., or Min.) at the end of six years. It is recommended that the student take this course if he is financially able to do so.

#### LABORATORY FACILITIES

The equipment in the laboratory of physics is being steadily increased, and the courses for professional students are arranged with special reference to their relation to the more advanced technical subjects.

For medical students, especial attention is given to light and current electricity; while for students of engineering, emphasis is laid upon mechanics, heat, and electricity. For undergraduates the facilities for instruction are on a par with those of similar institutions in the United States.

Shop training is given in the School of Arts and Trades where the equipment is in every respect of the best and most complete description.

For cement testing students are admitted to the cement-testing laboratories of the Bureau of Science in which hundreds of thousands of barrels are tested annually and where they have the advantage of instruction from experts in this line, as well as of observation of methods used and results obtained in a laboratory operating on a large commercial scale. The importance of this training in the Philippines, where, because of climatic and seismic conditions, cement plays so large a part among the materials of construction, cannot be overestimated. For the testing of other materials of construction the two testing machines belonging to the Bureau of Science are used, also a complete equipment for the testing of road materials.

The new laboratory building will contain in the Mechanical and Electrical Departments machine tools; a steam boiler; two steam engines; one gasoline or kerosene engine; one crude-oil engine, one hot-air engine; direct-current motors and generators of the series, shunt, and compound types; alternating-current generators of the different phase wound types; alternating-cur-



rent motors of the induction and other types; transformers, etc.; in addition to the necessary instruments and apparatus for carrying on complete tests of the various units.

Students are required to fire and operate the boiler plant; to adjust and run the various machines; to set up, adjust, and calibrate the necessary instruments and apparatus; and to make commercial tests of all the equipment.

In the Hydraulic Department provision is being made for testing the flow of water in pipes and tunnels, through orifices and overweirs also for the testing of meters, pumps and hydraulic motors.

#### SURVEYING

Only the best quality of instruments have been selected for the work in surveying, and the supply is sufficient to give every student a thorough training in field work. During the college year each student becomes familiar with and fairly proficient in the use of the tape, rod, level, transit, and camera-theodolite; while during the vacation field work he fills every position in actual field parties on railroad location and construction; staking cross sections; traversing, topographic, triangulation, and hydrographic surveys; and at the same time is drilled in the plotting and computation connected with his work.

#### ADMISSION

Applications for admission are received in the College of Engineering from three classes of candidates; (a) Persons who desire to pursue a regular course of study leading to a degree; (b) students who, having already attended some institution of collegiate rank, desire advanced standing in a regular course; (c) special students, not candidates for a degree.

#### ENTRANCE REQUIREMENTS

The subjects required for entrance to the College of Engineering are the following:

	Units.
English .....	5
History .....	2
Mathematics (including solid geometry) .....	3
Botany or General Biology.....	1
Physics .....	1
Total .....	12

In addition to the above, 3 units must be presented to make a total of 15 units. These additional units may be in history, government, zoölogy, chemistry, trigonometry, Latin, French,

German, or Spanish. In all other respects the requirements for admission and the regulations regarding entrance examinations are the same as for the College of Liberal Arts for which see pages 25 to 29.

Communications regarding admission should be addressed to the Dean, College of Engineering, University of the Philippines, and certificates and notebooks forwarded to the same address. Laboratory notebooks should be forwarded not later than June 1 to give adequate time for careful examination.

### FEES

For Filipino students there is no fee for matriculation or tuition. Each student is required to pay an athletic fee of ₱1 for each semester also laboratory fees for the laboratory courses when the latter are taken. The total amount of laboratory fees is approximately ₱20 per year. The fees for foreign students include tuition at the same rate as for other colleges.

### COURSES OF INSTRUCTION

#### CIVIL ENGINEERING

Professor WRENTMORE, Chief of Department. Associate Professor DRIGGS.  
Assistant Professor CANTERA; Mr. KING.

*Civil Engineering 1. Structural Mechanics.*—Must be preceded by Mathematics 26.

[5 hours, second semester; 5 units.

*Civil Engineering 2. Testing Laboratory.*—The ordinary tests of the common materials of construction. Must be preceded by Chemistry 3.

[Two half days, second semester; 2 units.

*Civil Engineering 3. Testing Laboratory.*—Continuation of Course 2.

[Two half days, first semester; 2 units.

*Civil Engineering 3a. Testing Laboratory.*—Required for students of Mechanical and Electrical Engineering.

[One-half day, first semester; 1 unit.

*Civil Engineering 4. Theory of Structures.*—Analysis of forces in simple roof and bridge trusses. Analytical and graphical methods. Must be preceded by Course 1.

[4 hours, first semester; 4 units.

*Civil Engineering 5. Theory of Structures.*—Continuation of Course 4. Analysis of forces in framed structures.

[4 hours, first semester; 4 units.

*Civil Engineering 6. Theory of Structures.*—An advanced elective, a continuation of Course 5. Secondary stresses, statically indeterminate structures.

[3 hours, first semester; 3 units.

*Civil Engineering 7. Design of Structures.*—Simple problems in roof and bridge design. Must be preceded or accompanied by Course 4.

[5 afternoons, first semester; 5 units.

*Civil Engineering 8. Design of Structures.*—Continuation of Course 7. Must be preceded by Course 9.

[3 afternoons, second semester; 3 units.

*Civil Engineering 9. Masonry and Foundations.*—Concrete, plain and reinforced, masonry, foundations, retaining walls. Given in two parts.

[9a—2 hours, second semester; 2 units. 9b—2 hours, first semester; 2 units.

*Civil Engineering 10. Hydraulics.*—Theory of mechanics of fluids. Flow and measurement of water, water motors, and pumps. Class room and Laboratory. Must be preceded by Course 1.

[5 hours, second semester; 5 units.

*Civil Engineering 11. Irrigation.*—Rainfall, run-off, irrigation works, irrigation law, river training and control. Must be preceded by Courses 9 and 10 and by Elementary Law.

[5 hours, second semester; 5 units.

*Civil Engineering 12. Municipal Engineering.*—Roads and streets, water supply, fire protection, sewerage, garbage disposal, and sanitation. Must be preceded by Courses 2, 3, 4, and 10, and Biology 20E. Given in two parts.

[12a—2 hours, second semester; 2 units. 12b—3 hours, first semester; 3 units.

*Civil Engineering 13. Hydraulic Laboratory.*—Measurement of water by means of weirs, orifices, nozzles and meters. Tests of pumping machinery.

Must be preceded by Civil Engineering 10.

[6 hours, first semester; 2 units.

*Civil Engineering 14. Railroad Engineering.*—Construction, equipment, maintenance, operation. Must be preceded by Surveying 3 and Civil Engineering 4.

[Hours to be arranged, 5 units.

## MECHANICAL ENGINEERING

Professor REYNOLDS, Chief of Department; Mr. SALAS.

*Mechanical Engineering 1. (Formerly Civil Engineering 13.) Principles of Mechanism.*—Kinematics of machine elements,

gearing, linkages, belting, trains, etc. Must be preceded by Mathematics 6.

[4 hours, first semester; 4 units.

*Mechanical Engineering 2. Continuation of Course 1.*—Graphic statics, forces, reactions, efficiencies. Textbook and drawing.

[7 hours, second semester; 3 units.

*Mechanical Engineering 3. Machine Design.*—Sketching and detailing of machine parts. Must be preceded by Drawing 2 and Machine Shop.

[9 hours, second semester; 3 units.

*Mechanical Engineering 4. Continuation of Course 3.*—Application to special machinery, making complete working drawings.

[9 hours, first semester; 3 units.

*Mechanical Engineering 5. Steam Power Machinery.*—Nomenclature of steam machinery. Elementary study of steam engines, boilers, auxiliary apparatus and accessories.

[4 hours, second semester; 4 units.

*Mechanical Engineering 6. (Formerly Civil Engineering 14.) Heat Engines.*—Steam engines and boilers, steam turbines, internal combustion engines, gas producers; thermodynamics of gases, saturated and superheated vapors as applied to heat engines, compressed air and refrigerating machinery. Must be preceded by Course 1, Chemistry 3, and Physics 4. Given in two parts.

[6a—2 hours, second semester; 2 units. 6b—3 hours, first semester; 3 units.

*Mechanical Engineering 7. Applied Mechanics.*—Application of the laws of Mechanics to practical problems. Must be preceded by Mathematics 26, and Course 2.

[5 hours, first semester; 5 units.

*Mechanical Engineering 8. Steam Boilers.*—Fuels and combustion, modern boilers, accessories, and chimneys. Must be preceded by Chemistry 3, Physics 4, and Course 5.

[3 hours, first semester; 3 units.

*Mechanical Engineering 9. Valve Gears.*—Design of modern valve gearing, Zeuner and Bilgram diagrams. Must be preceded by Courses 3 and 5.

[3 hours, first semester; 3 units.

*Mechanical Engineering 10. Thermodynamics.*—Mechanical theory of heat, gases, saturated and superheated vapors, various cycles of modern heat engines, expansion of steam, ammonia,

carbon dioxide, etc. Must be preceded by Mathematics 26, Chemistry 3, Physics 4, and Course 8.

[4 hours, second semester; 4 units.

*Mechanical Engineering 11. Hydrodynamics.*—Theory of mechanics of fluids, flow and measurement of water, theory of turbines, water wheels and centrifugal pumps. Must be preceded by Course 7.

[5 hours, second semester; 5 units.

*Mechanical Engineering 12. (Formerly Civil Engineering 15.) Steam Laboratory.*—Must be accompanied by Course 6.

[6 hours, first semester; 2 units.

*Mechanical Engineering 13. Steam Laboratory.*—Must be accompanied by Course 10.

[6 hours, second semester; 2 units.

*Mechanical Engineering 14. Steam Engines and steam turbines.*—Investigation and application of laws of thermodynamics to modern steam engines and turbines. Must be preceded by Courses 9, 10, and 11.

[3 hours, first semester; 3 units.

*Mechanical Engineering 15. Gas, compressed air and refrigerating machinery.*—Application of thermodynamics. Must be preceded by Courses 9, 10, and 11.

[3 hours, first semester; 3 units.

*Mechanical Engineering 16. Continuation of Course 13.*—Advanced course in steam laboratory.

[6 hours, first semester; 2 units.

*Mechanical Engineering 17. Water power engineering.*—The development of water power with particular reference to hydro-electric installations. Must be preceded by Course 11 and by Electrical Engineering 3.

[4 hours, first semester; 4 units.

*Mechanical Engineering 18. Commercial Mechanical Engineering.*—A study of steam-electric power plants and other plants from the commercial standpoint, including costs, estimates, valuations, operating costs, returns on investment, etc. If possible a study is made of a plant in actual operation. Must be preceded by all other prescribed courses and accompanied by Course 19.

[5 hours, second semester; 5 units.

*Mechanical Engineering 19. Design of a complete steam-electric or other plant.* Must be accompanied by Course 18.

[15 hours, second semester; 5 units.

*Mechanical Engineering 20. Advanced Steam Laboratory.*—Must be preceded by Course 16.

[6 hours, second semester; 2 units.

*Mechanical Engineering 21. Inspection trips.*—Students are required to visit steam-electric power stations, machine shops, manufacturing plants, etc., and make reports upon assigned subjects, such as general arrangement of plant, handling of fuel and materials, distribution of power, etc.

[4 hours, second semester; 1 unit.

### ELECTRICAL ENGINEERING

Professor REYNOLDS, Chief of Department, Mr. SALAS.

*Electrical Engineering 1. Direct currents.*—Theory of direct currents with applications to commercial instruments, motors and generators. Must be preceded by Mathematics 26 and Physics 4.

[4 hours, first semester; 4 units.

*Electrical Engineering 2. (Formerly Civil Engineering 16.) Direct and alternating current machinery.*—Must be preceded by Mechanical Engineering 1, Chemistry 3, and Physics 4. Required for students of Civil Engineering. Given in two parts.

[2a—2 hours, first semester; 2 units. 2b—4 hours, second semester; 4 units.

*Electrical Engineering 3. Alternating Currents.*—Wave forms, time constants, reactance, impedance, measurement of power, vector diagrams. Solutions of circuits having various arrangements of inductance and capacity. Elements of transformers, synchronous and induction motors, and converters. Must be preceded by Course 1 and Physics 24.

[4 hours, second semester; 4 units.

*Electrical Engineering 4. Alternating Currents.*—Measurements of polyphase circuits. Theoretical and practical treatment of transformers, synchronous and induction motors, transmission, etc. Must be preceded by Course 3.

[3 hours, first semester; 3 units.

*Electrical Engineering 5. Electrical Laboratory.*—Calibration of commercial instruments. Measurements of currents, potential and resistance. Direct current dynamos and motors. Must be preceded by Physics 24.

[6 hours, second semester; 2 units.

*Electrical Engineering 6. (Formerly Civil Engineering 20.) Electrical Laboratory.*—Must be accompanied by Course 2b. For students of Civil Engineering only.

[3 hours, second semester; 1 unit.

*Electrical Engineering 7. Telephony and telegraphy.*—The various telegraph, telephone and signal systems. Must be preceded by Physics 24 and accompanied by Course 3.

[2 hours, second semester; 2 units.

*Electrical Engineering 8. Electrical Laboratory.*—Continuation of Course 5. Alternating Current work.

[9 hours, first semester; 3 units.

*Electrical Engineering 9. Direct current dynamos.*—Design of electrical machinery. Must be preceded by Course 4.

[6 hours, second semester; 2 units.

*Electrical Engineering 10. Alternating current machinery.*—Modern alternating current machinery. Design of installations for various industrial purposes. Direct and alternating current railway motors. Must be accompanied by Course 9.

[3 hours, second semester; 3 units.

*Electrical Engineering 11. Advanced Electrical Laboratory.*—Testing of direct and alternating current motors, generators, transformers, etc.

[6 hours, second semester; 2 units.

*Electrical Engineering 12. Commercial Electrical Engineering.*—Analogous to Mechanical Engineering 18, with special reference to electrical engineering. Must be preceded by all other prescribed courses, and accompanied by Course 9.

[5 hours, second semester; 5 units.

*Electrical Engineering 13. Inspection trips.*—Analogous to Mechanical Engineering 21 with special reference to electrical engineering.

[4 hours, second semester; 1 unit.

#### ENGINEERING MATHEMATICS

Professor GURNEY, Chief of Department; Mr. TIENZO.

*Mathematics 6.*—A continuous course running throughout the year. Required of engineering students in their first year and open to others who may be qualified. Engineering students may not offer work done in Mathematics 1, 2, or 4 as a substitute.

[4 hours throughout the year; 8 units.

*Mathematics 16.*—An continuous course running throughout the year. Required of engineering students in their second year and open to others who may be qualified. Engineering students may not offer work in Mathematics 10, 14 or 15 in lieu of work in Mathematics 16.

[6 hours throughout the year; 12 units.

*Mathematics 26. Mechanics.*—Primarily for students in the College of Engineering. Required of engineering students and open to Senior College students who have completed Mathematics 6 and 16 or their equivalents.

[6 hours, first semester ; 6 units.

*Mathematics 101. Accounting for Engineers.*—A vocational course primarily for civil engineers. It comprises methods of accounting and cost keeping for engineering work.

[2 hours, first semester ; 2 units.

### MECHANICAL DRAWING

Assistant Professor CANTERA.

*Mechanical drawing 1.*—Lettering: Characteristics and proportions of standard letters; design of lettering; methods of spacing; design of titles; principles and definitions of mechanical drawing; exercises in the use of instruments; reproduction of drawings; cross sectioning; selected geometrical problems; tracing. Required of students in the first year in the College of Engineering, and in the second year of the Preparatory Engineering course in the College of Liberal Arts.

Textbook: Reinhardt, Free-Hand Lettering.

[9 hours, first semester ; 3 units.

*Mechanical Drawing 2. Descriptive Geometry.*—Representation of lines, planes, and surfaces, and of their relations; tangencies, intersections, and developments; warped surfaces; solution of problems in orthographic, central, and oblique projections, illustrated by examples in shades, shadows, perspective, and stereotomy. Recitations, lectures, drawing. Required of students in the first year in the College of Engineering and in the second year of the preparatory engineering course in the College of Liberal Arts.

[16 hours, second semester ; 6 units.

### PHYSICS

Professor WRIGHT, Chief of Department; Assistant Professors FISHER and SAMUELS, Messrs. CORCUERA and MACABULOS.

The instruction in physics is directed toward the following ends: (1) The training of teachers of physics for the secondary schools: (2) the training of engineering, medical, pharmacy, and veterinary students for their later professional work; (3) the training of the general student in scientific methods of work and in the understanding of the place of physical science in the modern world. In all courses the laboratory and the problem methods of instruction are emphasized.

*Physics 1. Elementary Physics.*—A first course in the elements



of physics designed primarily for students who do not present entrance physics, or whose preparation in physics is found upon trial, to be deficient.

[7 hours, first semester;  $\frac{1}{2}$  entrance credit. 7 hours, second semester;  $\frac{1}{2}$  entrance credit.

*Physics 2. General Physics.*—A course of lectures, demonstrations, and recitations covering the subjects of mechanics, molecular physics, heat, electricity, sound, and light, especial attention being given to recent discoveries and developments in physics. Prerequisite, Entrance Physics or Physics 1.

[3 hours, first semester; 3 units. 3 hours, second semester; 3 units.

*Physics 2-E.*—The same as Physics 2, but with additional work in the application of fundamental principles and in the solution of problems. Intended primarily for engineering students and for students specializing in science. Prerequisite, Entrance Physics and Trigonometry.

[3 hours, first semester; 3 units. 3 hours, second semester; 3 units.

*Physics 2-M.*—The same as Physics 2, but modified to suit the needs of the premedical student, and with the addition of three hours of laboratory work per week. Prerequisite, Entrance Physics or Physics 1.

[6 hours, first semester; 4 units. 6 hours, second semester; 4 units.

*Physics 2-P.*—The same as Physics 2, but modified to suit the needs of the student of pharmacy. Prerequisite, Entrance Physics or Physics 1.

[3 hours, first semester; 3 units. 3 hours, second semester; 3 units.

*Physics 3. Mechanics, Molecular Physics, and Heat.*—A laboratory course in mechanics, molecular physics, and heat, supplemented by lectures and classroom work. Prerequisite, Physics 2 and Trigonometry.

[8 hours, second semester; 3 units.

*Physics 4. Electricity, Sound, and Light.*—A continuation of Physics 3. Prerequisite, Physics 2 and Trigonometry.

[8 hours, second semester; 3 units.

#### SENIOR COLLEGE COURSES

*Physics 21. Molecular Physics and Heat.*—A course of lectures and advanced laboratory work. Two hours a week will be devoted to lectures on the kinetic theory, capillarity, elementary thermodynamics, conductivity of solutions, and electrolysis. The lectures will be supplemented by laboratory work involving accurate determinations of vapor pressures and densities, coeffi-

cients of friction of gases and liquids, molecular electrical conductivities, freezing and boiling points, latent and specific heats, high and low temperatures, radio-active constants, etc.

Prerequisite, Physics 3 and 4, and Calculus.

[8 hours, first semester; 4 units. 8 hours, second semester; 4 units.

*Physics 22. Light.*—A course of lectures and advanced laboratory work covering theoretically the more important phases of geometrical and physical optics, supplemented by laboratory work consisting of accurate measurements in diffraction, dispersion, interference, and polarization.

Prerequisite, Physics 3 and 4, and Calculus.

[8 hours, first semester; 4 units. 8 hours, second semester; 4 units.

*Physics 23. Electricity and Magnetism.*—A course of lectures and advanced laboratory work in electricity and magnetism. (Not given in 1918–19.)

Prerequisite, Physics 3 and 4 and Calculus.

[8 hours, first semester; 4 units. 8 hours, second semester; 4 units.

*Physics 24. Electrical and magnetic measurements.*—Must be preceded by Electrical Engineering 1. (Not given in 1918–19.)

[9 hours, first semester, 3 units.

## SURVEYING

Associate Professor DRIGGS.

*Surveying 1a. Use and care of Instruments.*—Lectures, textbook, recitations, and field work. Includes Traverse Surveys, Circular Curves, Leveling, Note Keeping and Computation.

[4 afternoons, first semester; 4 units.

*Surveying 1b. Special Surveys and Topographic Mapping.*—Four recitations a week, field and office work. Recitations on earth work, land surveying, special surveys, and adjustment of instruments. Field work consists of making topographic surveys by the plane-table, stadia, and photographic methods. Office work includes finished maps from each of the above surveys, one plate of conventional signs, and one profile showing geological structures.

[4 afternoons, second semester; 4 units.

*Surveying 2. Triangulation and Practical Astronomy.*—Recitations on principles of triangulation and field work in locating a triangulation net. Methods of determining time, latitude, and azimuth.

[2 hours, first semester; 2 units.

*Surveying 3. Field Work in Camp.*—Includes triangulation, base-line measurement, azimuth observations, topographic and hydrographic surveys, land surveying, survey for a railroad line.

[8 weeks, during vacation; 8 units.

*Surveying 4. Geodesy and Field Astronomy.*—Includes computations based on observations of Course 3, the projection of maps, time and latitude computations; recitations, and historical papers on geodesy.

[10 hours, second semester; 5 units.

*Surveying 5. Elementary Surveying.*—Use of instruments, field and office work. Required for students of Mechanical and Electrical Engineering.

[2 afternoons, first semester; 2 units.

### OUTLINE OF COURSES OF STUDY

The course of study leading to the degree of Bachelor of Science in Civil Engineering is as follows:

#### FIRST YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 6 .....	4	Mathematics 6 .....	4
English 1 .....	3	English 1 .....	3
Spanish .....	3	Spanish .....	3
Drawing 1 .....	3	Drawing 2 .....	6
Shop, Woodwork .....	3	Total .....	16
Total .....	16		

#### SECOND YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 16 .....	6	Mathematics 16 .....	6
Physics 2E .....	3	Physics 2E .....	3
Chemistry 1 .....	3	Chemistry 1 .....	3
Shop, Forge .....	4	Shop, Machine .....	4
Total .....	16	Total .....	16

#### THIRD YEAR.

First semester:	Units.	Second semester:	Units.
Mathematics 26 .....	6	Physics 4 .....	3
Physics 3 .....	3	Geology 3 (Mineralogy) .....	3
Chemistry 3 .....	3	Surveying 1B .....	4
Surveying 1A .....	4	Civil Engineering 1 .....	5
Total .....	16	Civil Engineering 2 .....	2
		Total .....	17

#### FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Geology 2 .....	3	Mathematics 101 (Accounting) .....	2
Civil Engineering 4 .....	4	Zoölogy 3 (Biology) .....	3
Civil Engineering 7 .....	5	Civil Engineering 3 .....	2
Mechanical Engineering 1 .....	4	Civil Engineering 9a .....	2
Surveying 2 .....	2	Civil Engineering 10 .....	5
Total .....	18	Civil Engineering 12a .....	2
		Mechanical Engineering 6a .....	2
		Total .....	18

Vacation term, surveying work in camp (Surveying 3), 8 units.

The following additional year will lead to the degree of Master of Science in Civil Engineering:

## FIFTH YEAR

First semester:	Units.	Second semester:	Units.
Civil Engineering 5 .....	4	English 6 .....	3
Civil Engineering 9b.....	2	Civil Engineering 8.....	3
Civil Engineering 12b.....	3	Civil Engineering 11.....	5
Mechanical Engineering 6b.....	3	Electrical Engineering 2b.....	4
Mechanical Engineering 12.....	2	Electrical Engineering 6.....	1
Electrical Engineering 2a.....	2	Law, Engineering .....	2
Law, Elementary .....	2		
Total .....	18	Total .....	18

The course of study leading to the degree of Bachelor of Science in Mechanical Engineering is as follows:

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 6 .....	4	Mathematics 6 .....	4
English 1 .....	3	English 1 .....	3
Spanish .....	3	Spanish .....	3
Drawing 1 .....	3	Drawing 2 .....	6
Shop, Woodwork .....	3		
Total .....	16	Total .....	16

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 16 .....	6	Mathematics 16 .....	6
Physics 2E .....	3	Physics 2E .....	3
Chemistry 1 .....	3	Chemistry 1 .....	3
Shop, Forge .....	4	Shop, machine .....	4
Total .....	16	Total .....	16

## THIRD YEAR.

First semester:	Units.	Second semester:	Units.
Mathematics 26 .....	6	Physics 4 .....	3
Physics 3 .....	3	Civil Engineering 1.....	5
Chemistry 3 .....	3	Mechanical Engineering 2.....	3
Surveying 5 .....	2	Mechanical Engineering 3.....	3
Mechanical Engineering 1.....	4	Mechanical Engineering 5.....	4
Total .....	18	Total .....	18

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Mechanical Engineering 4.....	3	Metallurgy .....	2
Mechanical Engineering 7.....	5	Mechanical Engineering 10.....	4
Mechanical Engineering 8.....	3	Mechanical Engineering 11.....	5
Mechanical Engineering 9.....	3	Mechanical Engineering 13.....	2
Electrical Engineering 1.....	4	Electrical Engineering 3.....	3
Total .....	18	Electrical Engineering 5.....	2
		Total .....	18

The following additional year will lead to the degree of Master of Science in Mechanical Engineering:

## FIFTH YEAR

First semester:	Units.	Second semester:	Units.
Civil Engineering 3a .....	1	English 6 .....	3
Civil Engineering 13 .....	2	Mechanical Engineering 18 .....	5
Mechanical Engineering 14 .....	3	Mechanical Engineering 19 .....	5
Mechanical Engineering 15 .....	3	Mechanical Engineering 20 .....	2
Mechanical Engineering 16 .....	2	Mechanical Engineering 21 .....	1
Mechanical Engineering 17 .....	4	Law, Engineering .....	2
Electrical Engineering 8 .....	1		
Law, Elementary .....	2	Total .....	18
Total .....	18		

The course of study leading to the degree of Bachelor of Science in Electrical Engineering is as follows:

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 6 .....	4	Mathematics 6 .....	4
English 1 .....	3	English 1 .....	3
Spanish .....	3	Spanish .....	3
Drawing 1 .....	3	Drawing 2 .....	6
Shop, Woodwork .....	3		
Total .....	16	Total .....	16

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 16 .....	6	Mathematics 16 .....	6
Physics 2E .....	3	Physics 2E .....	3
Chemistry 1 .....	3	Chemistry 1 .....	3
Shop, Forge .....	4	Shop, Machine .....	4
Total .....	16	Total .....	16

## THIRD YEAR.

First semester:	Units.	Second semester:	Units.
Mathematics 26 .....	6	Physics 4 .....	3
Physics 3 .....	3	Civil Engineering 1 .....	5
Chemistry 3 .....	3	Mechanical Engineering 2 .....	3
Surveying 5 .....	2	Mechanical Engineering 3 .....	3
Mechanical Engineering 1 .....	4	Mechanical Engineering 5 .....	4
Total .....	18	Total .....	18

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Physics 24 .....	3	Mechanical Engineering 10 .....	4
Mechanical Engineering 4 .....	3	Mechanical Engineering 11 .....	5
Mechanical Engineering 7 .....	5	Mechanical Engineering 13 .....	2
Mechanical Engineering 8 .....	3	Electrical Engineering 3 .....	3
Electrical Engineering 1 .....	4	Electrical Engineering 5 .....	2
Total .....	18	Electrical Engineering 7 .....	2
		Total .....	18

The following additional year will lead to the degree of Master of Science in Electrical Engineering:

## FIFTH YEAR

First semester:	Units.	Second semester:	Units.
Civil Engineering 13.....	2	English 6 .....	3
Mechanical Engineering 14.....	3	Electrical Engineering 9.....	2
Mechanical Engineering 17.....	4	Electrical Engineering 10.....	3
Electrical Engineering 4.....	4	Electrical Engineering 11.....	2
Electrical Engineering 8.....	3	Electrical Engineering 12.....	5
Law, Elementary .....	2	Electrical Engineering 13.....	1
Total .....	18	Law, Engineering .....	2
		Total .....	18

The course of study leading to the degree of Bachelor of Science in Mining Engineering is as follows:

## FIRST YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 6 .....	4	Mathematics 6 .....	4
English 1 .....	3	English 1 .....	3
Spanish .....	3	Spanish .....	3
Drawing 1 .....	3	Drawing 2 .....	6
Shop, Woodwork .....	3	Total .....	16
Total .....	16		

## SECOND YEAR

First semester:	Units.	Second semester:	Units.
Mathematics 16 .....	6	Mathematics 16 .....	6
Physics 2E .....	3	Physics 2E .....	3
Chemistry 1 .....	3	Chemistry 1 .....	3
Shop, Forge .....	4	Shop, Machine .....	4
Total .....	16	Total .....	16

## THIRD YEAR.

First semester:	Units.	Second semester:	Units.
Mathematics 26 .....	6	Physics 4 .....	3
Physics 3 .....	3	Chemistry, Quantitative .....	5
Chemistry, Qualitative .....	3	Geology 2 .....	3
Geology 1 (Mineralogy).....	3	Surveying .....	2
Surveying .....	3	Civil Engineering 1.....	5
Total .....	18	Total .....	18

(Vacation term, surveying work in camp, Surveying 3, 8 units.)

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Chemistry, Quantitative, and wet Assaying .....	5	Chemistry, Quantitative, and Wet Assaying .....	2
Fire Assaying .....	2	Geology .....	3
Petrography .....	4	Hydraulics .....	4
Geology .....	4	Electrical Machinery .....	4
Steam Engines and Boilers.....	3	Mining Engineering .....	5
Total .....	18	Total .....	18

The following additional year will lead to the degree of Master of Science in Mining Engineering:

## FIFTH YEAR

First semester:	Units.	Second semester:	Units.
Metallurgy .....	5	Metallurgy .....	5
Geology .....	4	Mechanical Engineering (Compressors) .....	3
Mining Engineering .....	4	Hydro-Electric Machinery .....	3
Ore Dressing .....	3	Mining Engineering .....	5
Law Elementary .....	2	Law Engineering .....	2
Total .....	18	Total .....	18

## THE SIX-YEAR COURSES

For the first two years of these courses the student will register in the College of Liberal Arts, where he will pursue the Preparatory Engineering Course as outlined on page 65. Upon satisfactory completion of that course, the degree of B. A. will be conferred and the student may then be admitted to the College of Engineering. During the first year in the College of Engineering he will pursue the following course:

First semester:	Units.	Second semester:	Units.
French or German .....	3	French or German .....	3
Chemistry .....	3	Chemistry .....	3
Shop, Forging .....	4	Shop, Machine work .....	4
English .....	3	English .....	3
History or Philosophy .....	3	Sociology .....	3
Total .....	16	Total .....	16

NOTE.—The student may elect either French or German, but will be required to complete two years' work in the language elected.

The fourth, fifth, and sixth years of these courses are the same as the third, fourth, and fifth years, respectively, of the five-year courses.

The degree of Bachelor of Science in Civil, Mechanical, Electrical, or Mining Engineering will be conferred upon the completion of five years of study, and the degree of Master of Science in the corresponding course upon the completion of six years.

## SUBSTITUTIONS

Candidates for the degrees in Civil Engineering may, with the approval of the Dean previously secured, make the following substitutions in the requirements for graduation:

Civil Engineering 14 may be substituted for Civil Engineering 11.

Civil Engineering 14 may be substituted for Civil Engineering 8.

Civil Engineering 14 may be substituted for Biology 20E and Civil Engineering 12B.

Surveying 4 may be substituted for Civil Engineering 11.

Surveying 4 may be substituted for Civil Engineering 8.

*Summary of enrollment of the College of Engineering during the Academic year 1917-18.*

Fifth year.....	2
Fourth year.....	8
Third year.....	6
Second year.....	18
First year.....	72
Special .....	2
Total .....	<hr/> 108



THE UNIVERSITY OF THE PHILIPPINES

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THE COLLEGE OF LAW

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EIGHTH ANNUAL ANNOUNCEMENT AND CATALOGUE



## Faculty of the College of Law

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IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

JORGE BOCOBO, LL. B.,  
Professor of Civil Law,  
Dean of the College of Law.

GEORGE A. MALCOLM, A. B., LL. B.,  
Justice of the Supreme Court,  
Professor of Public Law.

ADAM C. CARSON, LL. B.,  
Justice of the Supreme Court,  
Professorial Lecturer on International Law.

CHARLES SUMNER LOBINGIER, Ph. D., LL. M.,  
Judge of the United States Court for China,  
Nonresident Professorial Lecturer on Comparative Law for 1918-19.

QUINTIN PAREDES, B. A., LL. B., LL. M.,  
Attorney-General.  
Professorial Lecturer on Criminal Law.

JOSE C. ABREU, B. A., LL. M., D. C. L.,<sup>1</sup>  
Judge of the Court of First Instance,  
Professorial Lecturer on Trial Practice.

ANTONIO VILLAREAL,<sup>1</sup>  
Judge of the Court of First Instance,  
Professorial Lecturer on Criminal Procedure.

ANACLETO DIAZ CARBONEL,  
Fiscal, City of Manila,  
Professorial Lecturer on Trial Practice.

MARIANO H. DE JOYA, LL. B., LL. M.,  
Associate Professor of Remedial Law,  
Director, Legal Clinic.

H. LAWRENCE NOBLE, M. A., LL. B.,  
Associate Professor of Jurisprudence.

JOSE A. ESPIRITU, LL. B.,  
Assistant Professor of Mercantile Law.

EUSEBIO F. RAMOS, B. LL., M. LL.,  
Assistant Professor,  
Assistant Director, Legal Clinic.

PEDRO Y. YLAGAN, B. A., LL. B.,  
Instructor in Law,  
Secretary, Law Faculty.

SIXTO DE LOS ANGELES, B. A., L. M.,  
Professor of Legal Medicine, College of Medicine and Surgery,  
Lecturer on Legal Medicine.

JOSE ABAD SANTOS, LL. B., LL. M.,  
Assistant Attorney, Bureau of Justice,  
Lecturer on Jurisprudence.

ENRIQUE ALTAVAS, B. A., LL. B.,  
Chief of the Land Registration Office,  
Lecturer on Land Registration and Mortgages.

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<sup>1</sup> Absent on duty in the provinces.

CONRADO BENITEZ, Ph. B., M. A., LL. B.,  
Dean, College of Liberal Arts,  
Lecturer on Taxation.

MAXIMO M. KALAW, A. B., LL. B.,  
Chief, Political Science Department, College of Liberal Arts.

VICTORIANO YAMZON, B. A., LL. B.,  
Instructor in Public Speaking,  
SPECIAL LECTURERS.

IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University,  
Lecturer on Criminology and Penology.

AMASA S. CROSSFIELD, LL. B., LL. M.,  
Lecturer on Insolvency.

FRANCISCO ORTIGAS, B. A., LL. M.,  
Lecturer on Civil Law.

JUAN SUMULONG, LL. B.,  
Member of the Philippine Bar,  
Lecturer on Legal Ethics.

JOSE LAKI,  
Law Librarian.

## THE COLLEGE OF LAW

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The Board of Regents provided for the establishment of a College of Law in the University of the Philippines on January 12, 1911. The college was opened in July of the same year with two classes doing work. The entrance requirement was then graduation from a government high school or an approved private school, but with provision that one year later the completion of one year of college work would be a prerequisite to admission; on July 1, 1913, the requirement was raised to completion of two years of college work. Both a three and a four years' course were then offered. Beginning with the academic year 1917-18 the three years' course was discontinued, except for those previously enrolled, and the four years' course made fundamental with 110 units required for graduation. The College of Law is therefore committed to a four years' law course based on two years of prelegal collegiate training. Leading members of the bar and judiciary, and five instructors devoting their time exclusively to the school compose the faculty.

The College of Law has five principal purposes: (1) To prepare students by thorough and practical legal instruction conducted in the English language covering all the fundamental law subjects for the practice of law in the Philippines; (2) to graduate leaders for the country; (3) to contribute to Philippine legal literature and jurisprudence; (4) to bring repute to the Filipino people abroad by the standard of work done and to be of general use to the people of the Islands; and (5) to take the lead in the fostering of University activities and spirit and in law school matters generally.

The College of Law is a member of the Association of American Law Schools, a member of the Bureau of Comparative Law, American Bar Association, and "a recognized and approved law school."

### ADMISSION

Applicants for admission to the College of Law must have completed the two years' preparatory law course in the College of Liberal Arts, or its equivalent. The question of whether a course is equivalent to the prescribed requirements for admission will be determined in each case by the Dean. Graduates

from the preparatory law course of the Ateneo de Manila, Siliman Institute, and San Juan de Letran with the degree of Bachelor of Arts fulfill these requirements and will be admitted to the College of Law.

The routine of entrance for students desiring to matriculate in the college for the first time is as follows: (1) Confer with the Dean of the College of Law, presenting a certificate of work accomplished and an application for matriculation; (2) if admitted, register with the Secretary of the University, paying fees to him; (3) secure class cards from the secretary of the law faculty; (4) hand proper class card to the instructor of the course at first recitation. Students previously matriculated should first report to the Dean for selection of courses, then pay fees to the Secretary of the University, and lastly secure class cards from the secretary of the law faculty.

#### FEEES AND EXPENSES

The tuition fee is ₱50 per semester. Students of other colleges of the University taking courses in the College of Law amounting to less than 10 units a semester will be charged a tuition fee of ₱5 per unit a semester. In addition, all students are required to pay the sum of ₱1 each semester into the treasury of the athletic association. *All fees must be paid in advance.*

Textbooks are purchased by the students. Their estimated cost is about ₱50 per annum. Duplicate textbooks for the use of students with limited means can usually be found in the college library.

#### TIME AND PLACE

The academic year 1918-19 begins on July 2, 1917, and ends on or about April 1, 1919. The evening classes begin at either 5.30, 6.30, or 7.30 p. m. of every working day. All law classes meet in University Hall, Calle Padre Faura, Ermita.

#### BAR EXAMINATION RULES

Rule VI of the Supreme Court, for the examination of candidates for admission to the practice of law, as amended, requires all persons commencing the study of law to register their names in the office of the clerk of the court of the province in which they pursue their studies (Court of First Instance of Manila) within the months of June and July of each year for three consecutive years. A resolution of the Supreme Court also provides,

"That on and after the 1st day of August, 1918, no applicant other than those mentioned in Rules 3 and 4, will be admitted to take the examination who has not attentively and regularly studied law for a period of four years, of which at least the first three years' study must have been pursued in a recognized and approved law school, and the fourth year's study must have been pursued, either in a recognized and approved law school or university, or in the office of a practicing attorney or in a court of records."

In connection with the bar examination, the Law Faculty on November 9, 1916, approved the following resolution:

"Hereafter, no undergraduate in the College of Law shall take the bar examination without express permission from the faculty. Any undergraduate violating this rule shall not be admitted again to the College of Law. The permission herein referred to may be given in exceptional cases only. The Dean is hereby authorized to prepare each year a list of graduates and undergraduates who can take the bar examination. The Dean will then confer with the Justices of the Supreme Court, asking them to admit to the examination only the persons whose names appear on the list."

#### ATHLETICS

All students are required to take systematic physical exercise, provided they be certified as fit therefor by the medical examiner.

#### MILITARY DRILL

Military training is a part of the curriculum and all law students are required to take up the course for two years, except those who are exempted by the Exemption Board. Attendance is governed by the same rules applicable to the regular law subjects. Examinations are held and grades reported. No law student will be recommended for graduation who has failed in military training in any semester until he has removed such deficiency.

#### ATTENDANCE

The Law Faculty has laid down the following rules concerning attendance:

1. Any student who, for unavoidable cause, is obliged to absent himself from any college exercise must obtain a written excuse from the Secretary of the Law Faculty, to be shown his professors.

2. Excuse for absence does not absolve the student from doing

the work covered by the class during his absence, to the satisfaction of the professor in charge.

3. Any student who, during the semester, has for any cause been absent for more than the equivalent of four weeks' exercises in any subject shall be excluded from the examination in that subject and required to take the work again in class.

4. Tardiness shall be considered as absence.

5. Any student who, without permission of the professor, leaves the classroom for the remainder of the hour or stays out for more than 10 minutes, will be marked absent.

6. Every excuse must be asked for within two class days to be counted from the day a student returns to his classes, and must be presented to the instructors without delay. Failure to comply with either provision of this rule shall cause any absence to be unexcused.

7. Obtaining an excuse on misrepresentation shall constitute a serious breach of discipline and appropriate action will be taken accordingly.

8. Monthly reports of absences shall be forwarded to the Dean's office between the 7th and 10th of each month.

9. Shortly before the semester examinations, the Dean will issue to the members of the Faculty a list of students whose grades should be reduced on account of absences, specifying in what course or courses such reductions shall be made. Reductions shall be designated thus: "No," which means that a student can not take the examination and must repeat the course; "H," high; "M," medium; and "L," light. Every professor is also authorized to effect reductions as to students not listed by the Dean.

10. In case of absence from examination, the student concerned may, with the permission of the Dean, take the next regular examination in the subject, provided he does not come under rule 3.

11. Every student who wishes to discontinue his studies in the College of Law must, before leaving school, apply to the Dean for honorable dismissal.

#### WORK IN OTHER COLLEGES

Students may with the permission of the Dean and without additional expense, except the payment of laboratory fees, elect courses in other colleges of the University. The work in political science, history, English, and economics is especially valuable for law students.



## STUDENT ADVISER

The Dean or, in his absence, the secretary of the law faculty acts as adviser to law students. The offices of the Dean and the Secretary are open daily from 4.30 to 5.30 p. m. for this purpose. The "Monday Mentor," a series of advices by the Dean on student problems, is posted every Monday on the bulletin board, each issue remaining on the board for a week.

## LIBRARIES

The college possesses a working law library. Students also have access to the Philippine Library and to the libraries of the Supreme Court and the office of the Attorney-General.

## STUDENT ACTIVITIES

The College of Law plays a leading role in the development of college spirit and proper student activities. The different classes are organized. The "Philippine Barristers" meets once a week for practice in public speaking and parliamentary law, and gives two annual public programs. The "Junior Philippine Senate," whose members are selected by reason of scholastic and oratorical attainments, is patterned after the Philippine Senate and is designed to give training in legislation. In the "Philippine Barristers" and the "Junior Philippine Senate," the students use English and Spanish. Practice clubs are organized in the junior class for the trial of moot-court cases. The Philippine Law Journal is published by the students and alumni jointly. The College of Law Day includes an interclass athletic meet (with appropriate prizes), a musical program and general rejoicing. The College of Law Glee Club sings on University occasions as well as in College of Law programs. The Annual Oratorical Contest, for which Mr. Justice Carson gives the prizes, is an important event in the College of Law. There is also an annual trial in Spanish, to which the public is invited. The Student Council, composed of the heads of the different organizations and representatives from each class, acts in an advisory capacity to the Dean on student affairs. The college participates in the activities of the University Cadet Corps, in the publication of a University annual and in the Rizal Day parade. At the end of the second semester, the seniors have a program of activities, such as farewell gathering, class-day exercises, athletic games with the faculty and tree planting. The law alumni hold an annual meeting in commencement week.

## PRIZES AND HONORS

The following prizes, under the conditions named, are awarded during each academic year: Manresa's Commentaries on the Civil Code and Wigmore on Evidence offered by an Alumnus of the University to the two students who, during the entire course, have, respectively, attained the highest scholastic standing; Callaghan & Co. Law Publishers, Chicago, prize, consisting of the Cyclopedic Law Dictionary to the student who in his second year in the College of Law, attains the best general average during that year; a gold medal and a silver medal and a cup furnished by Justice Carson of the Supreme Court as prizes for the winners of the oratorical contest; the Rafael Del Pan cup to the team which is victorious in the annual debate between the seniors and the Philippine Barristers; United States Supreme Court Digest, Extra Annotated, 7 volumes, and Jones on Evidence, given by the Lawyers' Coöperative Publishing Company for the best thesis; and an athletic pennant to the class winning the college athletic meet, with prizes for the two individual winners.

The honor list for the calendar year 1917 includes the following: Highest scholastic standing for entire course, first Sidney C. Schwarzkopf, second, Felipe Ismael; valedictorian 1917 law class Felipe Ismael; best thesis, Felipe Ismael; second best thesis, José P. Melencio; second year honors, Ramon San José; oratorical contest, first, Bibiano Meer, second Mariano Ampil; college athletic meet, first, Hilario Abellana, second, Luis F. de Castro.

## SYSTEM OF INSTRUCTION

The question-and-answer method is the fundamental principle of classroom instruction in this college, said method being calculated to achieve the best results in mental training and the acquisition of knowledge of the law. Whether the class is studying a textbook, or cases, or provisions of the statute law, the Socratic method is adopted, and lectures are very rarely given. The title of "Lecturer" given to some members of the Law Faculty does not mean that they generally use the lecture system.

The courses are based on the statute law in force in the Islands and the cases construing the same. The Anglo-American law is resorted to in case the local law is silent on any given point, and even when the local law has an express provision, the common law is frequently studied for the purpose of comparison. The statute law, case books, textbooks and outlines are used.

Beginning with the first semester of 1917-18, the Law Faculty holds a midsemester meeting for the purpose of discussing the best methods of teaching, in the light of local conditions.

#### PRACTICE COURTS

The purpose of the practice courts, in conjunction with the courses in pleading and practice, is to qualify the student, as far as possible, for the actual practice of his profession upon graduation. During the first year in the course in Elementary Law, instruction is given in finding the law, in legal bibliography, and in the use of decisions and statutes. During the second year in Elementary Procedure, general introductory principles, including the elements of common law pleading and the organization and jurisdiction of the courts of the Islands, are studied; criminal procedure follows, taking up the principles in this branch. During the third year, civil procedure covers the principles of code pleading, followed by the course in Evidence. Trial practice and a general course in legal ethics and practice come in the senior year. Supplemental to the foregoing, the third year students are given instruction and practice as in justice of the peace courts, and in brief making and the argument and decision of questions of law, before practice clubs sitting as supreme courts, composed of members of the faculty and students. In the senior year every student is required to act as counsel in the preparation and trial of three moot court cases in which all stages of the proceedings are carried out from the filing of the complaint to final judgment. At least one case must be carried up on appeal to a supreme court composed of faculty and alumni members. The organization and conduct of the practice courts is in charge of a member of the faculty assisted by other members of the faculty and by judges and practicing attorneys. The senior practice court is completely organized with a presiding judge, a clerk, and a sheriff. In the practice clubs as well as in the senior practice court, English and Spanish are used.

#### LEGAL CLINIC

Beginning with the academic year 1918-19, a Legal Clinic is established, following one of the latest innovations in legal education in the United States and to the end that the student may gain experience in the actual practice of the legal profession. The clinic is under the supervision of the professor in charge of procedural courses, who is at the same time practicing law in Manila. Another member of the faculty takes immediate control of the clinic and devotes his entire time thereto. The members

of the senior class are required to assist said attorneys in the conduct of cases in the Manila courts, as in preparation for trial, drawing up pleadings and looking up the law. Seniors must be present at the trial of the cases to which they are detailed, take notes of the way the trial is conducted, and then confer thereon with the attorney in charge of the clinic. They must also help the attorney in the appeal of cases to the Supreme Court.

The attorney in charge will report at least once a month on the work of each senior and give grades at the end of each semester.

#### READING COURSES

The college believes that in addition to classroom work, students should be led to desire the broadest possible legal training. This end can best be subserved by acquaintance with the great jurists and commentators, past and present. Graduates should not only be acquainted with legal principles and the crystalized statute law, but with the reasons for the basic rules and their historical development. The lawyer thus is not only prepared to cope with the legal problems of the day, but also to keep in the vanguard of the skillful leadership in the coming generation.

As far as our facilities permit, students are asked to do private reading under the supervision of a member of the faculty. A minimum amount of work is required and credit therefor given, but much is left optional with the hope that the student will read much more than is assigned and acquire the habit of keeping abreast of the times in his profession and be an able adviser or legislator, as opportunity offers. The books to be read have been carefully selected and placed in the library within easy reach. Attention is directed to current articles in magazines and the student advised as to what books are most needful for his present studies and most suitable for his personal library. The different groups of students meet for consultation and guidance, more often in the first years of their course, thus gradually training them for independent method and thought. Students are urged to do much of their reading during vacation.

#### SPECIAL LECTURES

The plan has been inaugurated, and has become an established custom, of having an opening lecture by some prominent member of the bar or judiciary on the evening previous to the opening of the college. A short social reception precedes the lecture,

when students can meet each other and the faculty. Lecturers heretofore have been Hon. Charles B. Elliot, Secretary of Commerce and Police; Mr. Justice Carson, of the Supreme Court; Mr. Justice Johnson, of the Supreme Court; Hon. Rafael Palma, Secretary of the Interior; Hon. Ignacio Villamor, President of the University of the Philippines; Hon. Grant Trent, Justice of the Supreme Court; and Hon. Teodoro M. Kalaw, Under Secretary of the Interior.

Special lectures are also given before the different classes, and before the law forum, meeting monthly, composed of all law students. The lecturers during the year 1917-18 included Hon. Rafael Corpus, Under Secretary of Agriculture and Natural Resources; Lieutenant Colonel Henry M. Morrow, Judge Advocate General, U. S. Army in the Philippines; Attorney Francisco A. Delgado; Hon. George R. Harvey, Judge of the Court of First Instance of Manila; Hon. Charles S. Lobingier; Judge of the U. S. Court for China; and Hon. James A. Ostrand, Judge of the Court of First Instance of Manila.

#### BRIEFS

Each candidate for a degree is required in his senior year to prepare and present two briefs, one in the first semester and the other in the second semester. The brief must not be less than 2,000 words in length. It must consist of a thorough and intelligent comparison and discussion of the cases pertaining to the subject. It is prepared under the supervision of the Professor in charge of practice.

#### SCHOLARSHIP RULES

It is the purpose of the college to have its work characterized by completeness and thoroughness. Mid-semester "smoke-up" notices are sent to students doing unsatisfactory work. The examinations held at the end of each semester are made comprehensive and searching. The grades of students on their examinations and class records are indicated by the numbers 1, 2, 3, 4, 5, the first three numbers indicating completion of the course, 4 conditionally passed, and 5 not passed. The grade of 4 will ordinarily not be given by the Law Faculty.

The rules adopted by the Law Faculty provide as follows:

Every student whose class standing in any subject two weeks before the examination period is less than 60% shall be excluded from the examination in said subject and shall be reported with a grade of 5. The instructor in charge of the subject shall notify him at once of his exclusion from the examination.

Without the consent of the Dean, no student shall give up any subject after the middle of the semester if his class standing in said subject is poor. Any student violating this rule shall be reported with a grade of 5 at the end of the semester.

No student of the College of Law shall, directly or indirectly, ask any person to recommend him to his professor or professors for any grade in his class record, examination paper, or final report of grades. Any student violating this rule shall lose all credit in the subject or subjects regarding which such recommendation is made. The fact that a student is thus recommended shall be prima facie evidence that the recommendation is made at the request of the student concerned.

Any student of the College of Law, except those carrying special subjects, not passing at least one-half of the units taken will be placed on probation. Any student so placed on probation shall not be eligible to participate in any public activity of the College or University.

Any student necessary to be placed on probation for a second successive semester will be dropped from the rolls.

Freshmen found by the faculty to be deficient at the end of the first semester will be required to pass at least twelve units in the College of Liberal Arts, to be designated by the Dean, before being permitted to re-enter the College of Law.

No student will be recommended for graduation who does not have such number of grades of 1 and 2 as to make his general average  $2\frac{3}{4}$  or better. In the graduate course, a general average (on the basis of hours of credit) of  $2\frac{1}{2}$  is the standard of scholarship necessary for graduation with the degree of Master of Laws.

No student will be recommended for graduation who is not reported as having such knowledge of civil law, mercantile law, remedial law, criminal law, private international law, conveying, and practice (trial practice, evidence, and practice court) as should enable him to pass the bar examination without difficulty.

#### THESES

Each candidate for the degree in the graduate and undergraduate courses must prepare and present a satisfactory thesis upon some subject on which the law is unsettled, disputed, or in a formative condition. The thesis must consist of a thorough and intelligent comparison and discussion of the cases pertaining to the subject and must represent the original independent study and investigation of the student. In the grad-

uate course the thesis must be of marked excellence, constituting a contribution to legal scholarship.

The thesis must not be less than 4,000 words in length and must be filed with the Dean on or before the first Tuesday after classes are resumed in January of the year in which the degree is to be granted.

Rules governing the writing of these have been promulgated by the Thesis Committee. A list of subjects is issued annually by that body. All theses approved are bound and kept in the college library, and all the rights therein belong exclusively to the University of the Philippines. Those of exceptional merit are published.

#### DEGREE

Students must complete the full courses of instruction, perform all required exercises, and pass all examinations to the satisfaction of the faculty before being recommended for the degree of Bachelor of Laws.

#### INFORMATION

For further information address the Dean of the College of Law, University of the Philippines, Manila, P. I. The Dean and the Secretary will be in their offices in University Hall from 4 to 6 p. m., June 24 to June 27, 1918, for the purpose of conferring with students, and from 3 to 7 p. m. on June 28 and 29 to register students.

#### COURSES OF INSTRUCTION

##### FIRST YEAR

##### FIRST SEMESTER

*Elementary Law.*—This course gives a general view of the development of the law and of rights, remedial and substantive; a description of the sources of the law in force in the Philippines, and a systematic outline of the principal branches of the law. Its chief purposes are to set forth the fundamental conceptions which underlie every department of the law, and to indicate the subject and scope of the various courses offered in the curriculum. The following subjects are also covered: Where to find the law; how to use decisions and statutes (including study of cases); how to find the law; legal bibliography.

Textbook: Fishback, *Elementary Law* (Hall's ed.). Reference book: Cooley's *Brief Making and the Use of Law Books*.

[2 units; daily for first six weeks.

Mr. YLAGAN.

*Institutes of Civil Law.*—A study of the evolution of Roman Law from the earliest period to the completion of the Corpus Juris, with a critical analysis of the Institutes. Followed by a historical survey of the development of the civil law as now existing in the Philippines. Syllabi and text of the Institutes. A companion course to Elementary Law, serving to introduce the civil law.

Textbooks: Lobingier, The Evolution of the Civil Law; Espiritu, Compiled Notes on Roman Law; Hammond, Sandars Justinian.

[4 units. Assistant Professor ESPIRITU.]

*Persons and Family Relations.*—Based on Book I and Book IV, Title III, of the Civil Code; the Spanish Marriage Law of 1870; sections 551–581 and 765–772 of the Compiled Code of Civil Procedure; and on General Orders No. 68. Outlines, recitations, and assigned cases.

Textbooks: Bocobo, Outlines of the Law of Persons and Family Relations; Tiffany's Persons and Domestic Relations. Reference books: Manresa's Commentaries on the Civil Code.

[3 units. Dean BOCOBO.]

*Philippine Government.*—Its development and fundamentals together with an analysis of the structure and functions of the present Insular Government. A large portion of the Administrative Code is studied. Textbook, recitations, assigned reading, and reports.

Textbook: Malcolm, Philippine Government.

[3 units. Assistant Professor KALAW.]

*Reading Course (I).*—Private reading of assigned books. For 1918–19: Brief Making and Use of Law Books; Morris, History of the Development of Law; Lee, Historical Jurisprudence; Carter: Law, Its Origin Growth and Function. Group meetings, reports, outlines of work covered and examinations.

[Associate Professor NOBLE.]

#### SECOND SEMESTER

*Criminal Law.*—Study of the Correctional Code, of the penal portions of the Administrative Code and other penal acts. Outlines, recitations, and assigned cases from the Philippine Reports.

[5 units. Professor PAREDES.]

*Obligations (Contracts).*—A study of the general principles of obligations, contracts, and quasi contracts under the civil law with comparative inquiries into the American law. Based



on Book IV, Titles I, II, XII (chapters 1, 3) XIII, XVI (chapter 1), of the Civil Code. Outlines, recitations, and assigned work, including cases from the Philippine and American Reports.

Textbook: In preparation.

Reference books: Manresa's Commentaries on the Civil Code; Bishop on Contracts.

[6 units. Dean BOCOBO.

*Public Speaking.*—Elements of elocution and argumentation. Recitations and practice with criticism.

Textbooks: Fulton and Trueblood, Essentials of Public Speaking; Laycock and Scales, Argumentation and Debate.

[2 units. Mr. YAMZON.

*Reading Course (II).*—Lombroso: Crime, Its Causes and Remedies; De Quiros: Modern Theories of Criminology; Maine's Early History of Institutions (Chapter IX, X); Maine's Ancient Law; Wigmore: Principles of Judicial Proof; Pollock: Expansion of the Common Law; Holmes: The Common Law; Bryce: Studies in History and Jurisprudence (Essays II, XIV, XV); Selected Essays in Anglo-American Legal History (numbers 31, 38, 39, 40, 18).

[Associate Professor NOBLE.

## SECOND YEAR

### FIRST SEMESTER

*Agency.*—Based on Book IV, Title IX, of the Civil Code, and on Book I, Title VI, Book II, Title III, of the Code of Commerce. Assigned cases from the Philippine and American Reports.

Textbook: Goddard's Cases on Agency.

[2 units. Assistant Professor ESPIRITU.

*Elementary Procedure.*—A study of the history and purpose of procedure; the organization and jurisdiction of the courts; and the general principles of remedial law, including the elements of common-law pleading. Special attention to the inferior courts. Outlines, recitations, and assigned work.

References: Bryant's Code Pleading; Phillips on Code Pleading.

[2 units. Associate Professor DE JOYA.

*Oratory.*—A study of the lives of great orators; analysis of the world's greatest orations. Particular attention is given to forensic oratory. Each student must write one complete and finished oration.

Textbooks: Shurter, Rhetoric of Oratory; Shurter, Master-

pieces of Modern Oratory. Textbook on Philippine Eloquence in preparation.

[2 units. Mr. YAMZON.

*Property*.—Includes both Real and Personal Property. A study of Book II; Book III, Titles I, II; Book IV, Titles VI (chapters 1, 2), VII, XII (chapter 4), XVIII of the Civil Code; chapter III, Code of Civil Procedure. Outlines, recitations, and assigned cases from the Philippine Reports.

Reference books: Manresa's Commentaries on the Civil Code.

[4 units. Dean BOCOBO.

*Torts and Damages*.—A study of torts and damages under the civil law and the common law. Recitations.

Textbooks: Burdick's Cases on Torts; Beale, Cases on Damages.

[3 units. Associate Professor NOBLE.

*Reading Course (III)*.—Continuation.

[Associate Professor NOBLE.

*Philippine Barristers (I)*.—General literary practice.

[Mr. YAMZON.

#### SECOND SEMESTER

*Administrative Law*.—The law governing administrative action. Also covers the law of officers and elections. Based on portions of the Administrative Code.

Textbooks: Freund's Cases on Administrative Law; Goodnow's Cases on the Law of Officers; Teodoro and Diokno, Annotated Election Law.

[2 units. Associate Professor NOBLE.

*Bailments and Carriers*.—Brief consideration of bailments in general, and particular attention to the law of pledge, innkeepers, and common carriers of goods; carriers of passengers; the post office and telegraph and telephone companies, as carriers of messages. Based on Book IV, Titles VI (chapter 3), X, XI, XV (chapter 2), of the Civil Code; Book II, Titles IV, V, VII, of the Code of Commerce, and Acts 2137 and 2307, and of Acts 2507 and 2616. Assigned cases.

Textbooks: Goddard, Outlines of Bailments and Carriers; Goddard's Cases on Bailments and Carriers.

[2 units. Associate Professor NOBLE.

*Criminal Procedure*.—Study of the Code of Criminal Procedure as amended and of portions of the Administrative Code. Outlines, recitations, and assigned cases from the Philippine Reports.

Textbook: In preparation.

Reference: Clark's Criminal Procedure.

[2 units. Associate Professor DE JOYA.

*Mercantile Law.*—Based on Book IV, Title XIV, of the Civil Code; Book I, Titles I, II, III, V, and Book II, Titles IX, X, XI, XII, XIII, of the Code of Commerce; the Warehouse Receipts Law; and the Negotiable Instruments Law. Includes suretyship. Assigned cases.

Textbook: Smith and Moore, Cases on Bills and Notes. Reference books: Ogden's Negotiable Instruments; Espiritu's Notes on the Code of Commerce.

[4 units. Assistant Professor ESPIRITU.

*Partnership.*—Based on Book IV, Title VIII, of the Civil Code, and on Book II, Title I, sections 1, 2, 3, 5, 6, and 13, of the Code of Commerce. Assigned cases.

Textbooks: Mechem, Elements of Partnership; Mechem, Cases on Partnership.

[2 units. Assistant Professor ESPIRITU.

*Sales.*—A study of sales and exchange, with comparative inquiries into the American law. Based on Book IV, Titles IV and V of the Civil Code, and Book II, Title VI of the Code of Commerce. Outlines and recitations. Assigned cases from the Philippine Reports.

Textbook: Bocobo, Outlines of the Law of Sales; Woodward, Cases on Sales. Reference books: Manresa's Commentaries on the Civil Code.

[2 units. Associate Professor NOBLE.

*Reading Course (IV).*—Continuation.

[Associate Professor NOBLE.

*Philippine Barristers (II).*—Practice in debating.

[Mr. YAMZON.

### THIRD YEAR

#### FIRST SEMESTER

*Civil Procedure.*—Study of the Code of Civil Procedure as amended, and of portions of the Administrative Code. Outlines and assigned cases from the case book and the Philippine and California Reports. Code pleading and practice is emphasized.

Textbook: Sunderland's Cases on Code Pleading. References: Bryant's Code Pleading; Phillips on Code Pleading; Pomeroy's Code Remedies.

[5 units. Associate Professor DE JOYA.

*Admiralty.*—Study of Book III, Titles I, II, III (sections 1, 2, 3), IV, V, and Book IV, Title II, of the Code of Commerce; and of Acts 2507 and 2616. Assigned cases.

[1 unit. Assistant Professor ESPIRITU.

*Land Registration and Mortgages.*—Based on the Philippine Bill, sections 13–18, 63–65; sec. 9, Jones Law; portions of the

Administrative Code; the Friar Lands Act; the Public Land Law; the Land Registration Law; the Cadastral Act, as amended; the Spanish Mortgage Law; the Regulations for the enforcement of the Mortgage Law; and the Chattle Mortgage Law. Assigned cases from the Philippine Reports; practical exercises.

[3 units. Mr. ALTAVAS.

*Private Corporations.*—Based on the Corporation Law and the Public Utility Law, and portions of other laws and the Code of Commerce. Recitations; assigned cases.

Textbook: Richard, Cases on Private Corporations. Reference book: Elliott on Private Corporations.

[2 units. Assistant Professor ESPIRITU.

*Public Corporations.*—The general nature and the rights and liabilities of public corporations. Includes the Department of Mindanao and Sulu, the cities of Manila and Baguio, provinces, municipalities, and townships. Based on the Administrative Code.

Textbook: Macy, Cases on Public Corporations.

[2 units. Associate Professor NOBLE.

*Reading Course (V).*—Continuation.

[Associate Professor NOBLE.

*Practice Clubs (I).*—Justice of the peace practice.

[Associate Professor DE JOYA.

*Philippine Barristers (III).*—Drill in forensic oratory.

[Mr. YAMZON.

#### SECOND SEMESTER

*Insurance.*—Based on Book IV, Title XII (chapters 1, 2), of the Civil Code, and on the Insurance Act, as amended. Recitations; assigned cases from the Philippine and American Reports.

[1 unit. Assistant Professor ESPIRITU.

*Constitutional Law.*—The course is divided into three parts: I. Introductory and comparative—including a study of the constitutions of the United States, Spain, Argentina, Cuba, Japan, and Australia; II. Philippine constitutional history—including a study of the Malolos constitution; III. Philippine Constitutional Law—the existing organic law and the basic principles of the Philippine Government are studied in detail.

Textbooks: Malcolm, Philippine Government; Hall's Cases on Constitutional Law.

[3 units. Justice MALCOLM.

*Evidence.*—Based principally on sections 273–376 and 381–383 of the Compiled Code of Civil Procedure, and sections 55–62 of G. O. 68. Recitations and assigned cases.

Textbook: Wigmore's Cases on Evidence. References: Wigmore on Evidence; Wellman's The Art of Cross-Examination.

[4 units. Associate Professor DE JOYA.

*Private Corporations.*—Continuation of course of first semester.

[2 units. Assistant Professor ESPIRITU.

*Taxation.*—Based on portions of Acts of Congress and the Administrative Code.

Textbook: Goodnow's Cases on Taxation.

[1 unit. Associate Professor BENITEZ.

*Wills, Descent, and Administration.*—Comprehends the nature of wills; formalities prescribed by law for the due execution of wills; the probating of wills; testamentary and legal succession; the administration of decedent's estates, etc. Based on Book III, Title III, of the Civil Code; sections 582-764 and 773-783 of the Compiled Code of Civil Procedure; and portions of the Administrative Code and Land Registration Law. Outlines and recitations. Assigned cases. Special lectures on succession by Mr. Ortigas.

Textbook: Costigan's Cases on Wills and Administration. Reference books: Manresa's Commentaries on the Civil Code.

[3 units. Associate Professor NOBLE.

*Reading Course (VI).*—Continuation.

[Associate Professor NOBLE.

*Practice Clubs (II).*—Argument and decision of cases before Supreme Courts on agreed statement of facts.

[Associate Professor DE JOYA.

*Philippine Barristers (IV).*—Drill in parliamentary law.

Textbook: Robert's Rules of Order.

[Mr. YAMZON.

#### FOURTH YEAR

##### FIRST SEMESTER

*Bankruptcy and Insolvency.*—Study of the Bankruptcy and Insolvency Law. Preparation of papers; recitations.

[1 unit. Assistant Professor ESPIRITU.

*Code Review (Public Law).*—A general survey and review of Criminal Law and Political Law.

[2 units. Professor PAREDES and Justice MALCOLM.

*Conveyancing.*—Practical work in the preparation of all the more important forms of conveyances, including thereunder deeds, mortgages, wills, and assignments of various sorts, contracts, agreements, corporate and partnership articles, and such other instruments as the lawyer in actual practice is likely to be

called upon to prepare. The Notarial Law and other portions of the Administrative Code are also studied.

Reference book: Church, Legal and Business Forms.

*Legal Medicine.*—It aims to cover the points most essential to the subject necessary to make the lawyer acquainted with the leading facts and principles of medicine and their application to the requirements of the law and the administration of justice. It is designed especially to meet the needs of the legal profession in the Philippines.

Specimens, charts, pictures, and other museum specimens illustrative of various branches of legal medicine, are used to facilitate instruction.

Those law students who wish to acquire special knowledge regarding research work on any branch of the subject are allowed to join with the senior medical students in Legal Medicine 2.

Textbook: Emerson, Legal Medicine and Toxicology.

[2 units. Professor DE LOS ANGELES.

*Mining and Irrigation Law.*—Lectures with assigned work. Based on the Spanish Law of Waters of August 3, 1866, the Irrigation Law, sections 15, 20–62 of the Philippine Bill, and Acts 624 and 1128.

[1 unit. Associate Professor NOBLE.

*Public International Law.*—Lectures, with assigned reading from Moore's Digest of International Law.

Textbooks: Davis on International Law; Evan's Cases on International Law.

[2 units. Justice CARSON.

*Trial Practice.*—Study of text and outlines; preparation of pleadings; brief making, and criticism of work in Practice Court. Includes work in Legal Clinic, which is open throughout the year. Assigned cases from the Case Book and Philippine Reports.

Textbook: Sunderland, Cases on Trial Practice.

[3 units. Associate Professor DE JOYA.

*Brief.*

*Practice Court.*—The purpose of the court is to afford students practical instruction in pleading and practice and actual experience in the commencement and trial of cases through all their stages.

[Associate Professor DE JOYA, Professor DIAZ, and Mr. YLAGAN.

*Junior Philippine Senate.*—Legislative practice.

[Mr. YAMZON.

#### SECOND SEMESTER

*Code Review (Civil Law).*—A general survey and review of civil law in its broadest sense.

[3 units. Dean BOCORO.

*Code Review (Mercantile Law).*—A general survey and review of mercantile law in its broadest sense.

[3 units. Assistant Professor ESPRITU.]

*Code Review (Remedial Law).*—A general survey and review of Criminal Procedure, Civil Procedure, and Evidence.

[3 units. Associate Professor DE JOYA.]

*Legal Ethics and General Practice.*—Lectures; recitations; study of text and code of ethics; practical suggestions for practice.

Textbook: Warvelle on Legal Ethics.

[1 unit. Judge SUMULONG.]

*Private International Law.*—Explanatory lectures; recitations; study of text; leading cases.

Textbooks: Minor's Conflict of Laws; Lorenzen Cases on Conflict of Laws.

[3 units. Mr. SANTOS.]

*Brief.*

*Practice Court.*—Follows same plan as in first semester.

[Associate Professor DE JOYA, Professor DIAZ, and Mr. YLAGAN.]

*Junior Philippine Senate.*—Legislative practice.

[Mr. YAMZON.]

#### Outline of courses

##### FIRST YEAR

First semester:	Units.	Second semester:	Units.
Elementary law .....	2	Criminal law .....	5
Institutes of civil law .....	4	Obligations .....	6
Persons and family relations .....	3	Public speaking .....	2
Philippine Government .....	3	Reading course (II) .....	
Reading course (I) .....		Total .....	13
Total .....	12		

##### SECOND YEAR

First semester:	Units.	Second semester:	Units.
Agency .....	2	Administrative law .....	2
Elementary procedure .....	2	Bailments and carriers .....	2
Oratory .....	2	Criminal procedure .....	2
Property .....	4	Mercantile law .....	4
Torts and damages .....	3	Partnership .....	2
Reading course (III) .....		Sales .....	2
Philippine Barristers (I) .....		Reading course (IV) .....	
Total .....	13	Philippine Barristers (III) .....	
		Total .....	14

##### THIRD YEAR.

First semester:	Units.	Second semester:	Units.
Civil procedure .....	5	Insurance .....	1
Admiralty .....	1	Constitutional law .....	3
Land registration and mortgages .....	3	Evidence .....	4
Private corporations .....	2	Private corporations .....	2
Public corporations .....	2	Taxation .....	1
Reading course (V) .....		Wills, descent and administration .....	3
Practice clubs (I) .....		Reading course (VI) .....	
Philippine Barristers (II) .....		Practice clubs (II) .....	
Total .....	13	Philippine Barristers (IV) .....	
		Total .....	14

## FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Bankruptcy and insolvency.....	1	Code review (Civil law).....	3
Code review (public law).....	2	Code review (Mercantile law).....	3
Conveyancing .....	2	Code review (Remedial law).....	3
Legal medicine .....	2	Legal ethics and general practice.....	1
Mining and irrigation law.....	1	Private international law.....	3
Public international law.....	2	Brief .....	
Trial practice .....	3	Practice court.....	
Brief .....		Junior Philippine Senate.....	
Practice court .....		Total .....	13
Junior Philippine Senate.....			
Total .....	13		

There is thus required for graduation the completion of 110 units, 105 as given above, and 5 units granted for the practice court, briefs, reading courses, and other required work.

## POST GRADUATE REVIEW COURSE

Assistant Professor ESPIRITU, Director.

A review course, open to graduates of the College of Law; to graduates of law schools, members of the Association of American Law Schools; and to graduates of a law school or a university in the Philippines, recognized and approved by the Secretary of Public Instruction, the applicant being otherwise qualified for admission to the bar examination, and able to satisfy the Director that he possesses sufficient knowledge of English to take the work to advantage, will as usual be given this year. Its purpose is to prepare candidates for the bar examination; consequently, there will be a general review of the subjects required for the bar examination, including consideration of previous questions. The course will begin on May 2, 1918, and extend to about the 1st of September. The fees are ₱50 for each student, payable in advance. The Director will be in the office of the Dean of the College of Law in University Hall on April 29 and 30 to confer with and register students.

*Outline of courses*

[May-June.]

1. *Mercantile Law*.—Four hours a week. Professor Espiritu.
2. *Civil Procedure*.—Five hours a week. Professor De Joya.
3. *Private International Law*.—Two hours a week. Mr. Santos.

[July-August 17.]

1. *Civil Law*.—Six hours a week. Dean Bocobo.
2. *Criminal Procedure*.—Two hours a week. Professor De Joya.
3. *Crimes*.—Five hours a week. Professor Paredes.

[After the Second Exercise.]

*Practical Exercises*.—Two weeks, hours to be announced in time, Mr. Ylagan.



## GRADUATE COURSE

A graduate course leading to the degree of Master of Laws is given, beginning with the academic year 1917-18.

*Admission.*—The following persons may be admitted thereto:

(1) Those who have received the degree of Bachelor of Laws from the University of the Philippines, or

(2) Those who have received the degree of Bachelor of Laws, or an equivalent degree, from a law school which is a member of the Association of American Law Schools, or from any law school of similar recognized standing, and who, on date of enrollment, fulfill the entrance requirements in the College of Law, University of the Philippines.

*Requirements for Graduation.*—At least one year's residence and the satisfactory completion of a course of legal study amounting to 20 units, approved by the Dean of the College of Law, and the preparation of a thesis are prerequisites to recommendation for the degree. Every candidate must obtain a general average (on the basis of hours of credit) of  $2\frac{1}{2}$ . The thesis must be of marked excellence, at least 4,000 words in length, and must be a contribution to legal scholarship.

*Fees.*—The fees are ₱50 a semester, payable in advance.

## COURSES OF INSTRUCTION

## FIRST SEMESTER

*Comparative Law (European).*—A brief study of the important events which led to the codification of the laws of Continental Europe; followed by a comparative and analytical study of the provisions of some of these codes. Explanatory lectures and original research work by the students.

Textbooks: A General Survey, Continental Legal Series; German Civil Code; French Civil Code. Reference book: Schuster, Principles of German Civil Law.

[2 units. Assistant Professor **ESPIRITU**.

*Evolution of the Modern Civil Law.*—Traces its beginnings in the blending of native, Teutonic, or Gothic law with the Roman survivals; the revival of Roman Law in Italy and the influence of the Canon Law; the "reception" of Roman Law in the adjacent countries—Spain, France, Germany, Switzerland, Holland; the expansion of the Civil Law through the growth of colonial systems especially those of Spain, France and Holland; the Codification movements; the rebirth of the Civil Law through the Napoleonic legislation; the Common Law's indebtedness to Rome.

Syllabi, lectures, and directions for original research.

[1 unit. Judge **LOBINGIER**.

*Jurisprudence.*—A study of the nature of law, the scope of effective legal action in adjusting human relations and regulating human acts, the modes of effective law making, and the application and enforcement of law.

Textbooks: Salmond's *Jurisprudence* and Holland's *Elements of Jurisprudence*. Special readings will be assigned.

[2 units. Mr. SANTOS.

*Law Reform.*—A thorough and intensive study of how the laws in force in the Philippine Islands may be changed to meet actual conditions. Definite reforms are proposed and fully discussed. Seminar work, lectures, recitations.

[2 units. Civil Law, Dean BOCOBO.  
Remedial Law, Professor DE JOYA.  
Mercantile Law, Professor ESPIRITU.  
Criminal Law, Professor DE JOYA.  
International Law, Justice CARSON.  
Political Law, Professor NOBLE.

*Taxation.*—Based on portions of Acts of Congress and the Administrative Code.

Textbook: Goodnow's *Cases on Taxation*.

[1 unit. Dean C. BENITEZ.

*Theory and Practice of Legislation.*—A study of the methods of procedure of legislative bodies, with special reference to the methods of the Philippine Congress. Mechanics of bill drafting.

[2 units. Associate Professor KALAW.

## SECOND SEMESTER

*Comparative Law (Latin-American).*—Continuation of the course of the first semester.

Textbooks: Argentine Civil Code; Civil Code of Chile.

Reference book: Giron, *Instituciones Politicas y Juridicas de los Pueblos Modernos*.

[2 units. Assistant Professor ESPIRITU.

*Contemporary Legal Problems.*—Study of some fundamental legal problems of present-day interest. Special readings will be assigned.

[2 units. Mr. SANTOS.

*Criminology and Penology.*—This is a seminary course, and the work includes the preparation, discussion, and criticism of papers dealing with the causes of crimes, prevention of crimes, reformation of criminals and the different penitentiary systems. Special lectures by Professor De los Angeles.

Reference book: *The Modern Criminal Science Series*.

[1 unit. Associate Professor DE JOYA.

*Legal History, Biography, and Literature.*—A general survey of the events, persons, periods and movements in the development of the laws of the peoples of the earth; the aims of the Historical School; accepted codes of moral, "natural," civil and criminal law; the relation of the Civil Law and the Common Law; the great jurists of the world; legal masterpieces; the English, American and Spanish bars.

*References:* Allen, *The Evolution of Governments and Laws*; A General Survey (Continental Legal History Series); MacDonald and Manson, *Great Jurists of the World*; Veeder: *Legal Masterpieces*; and others.

[2 units. Associate Professor NOBLE.

*Legal Philosophy.*—The legal philosophies of the world; development of legal philosophy; the Neo-Kantian, Neo-Hegelian, and Positivist schools; evolution of ideas of law and the State; recent surveys of fundamental problems of law and punishment; relation of authority of the State to individual freedom of activity.

*References:* Berolzhemier: *The World's Legal Philosophers*; Gareis: *Science of Law*; Pound: *Readings on the History and System of the Law*; Modern French Philosophy by Foullee, Charmont, Dugut and Demogue; Tarde: *Penal Philosophy*; Lombroso and De Quiros: *Modern Theories of Crime and Criminology* and Current Writers of the Day.

[2 units. Associate Professor NOBLE.

*Statutory Construction.*—A study of Philippine Statutory Construction, including an analysis of the provisions of Articles 3-5, 7 of the Civil Code; sections 1-4, 286-94 of Act No. 190; Sections 2-15 of the New Administrative Code, and assigned cases from the Philippine and American Reports.

Reference book: Malcolm, *Philippine Government*; Black, *Interpretation of Laws*.

[1 unit. Associate Professor DE JOYA.

#### *Outline of courses*

First semester:	Units.	Second semester:	Units.
Comparative Law (European).....	2	Comparative Law (Latin-American) .....	2
Evolution of Modern Civil Law....	1	Contemporary Legal Problems.....	2
Jurisprudence .....	2	Legal History .....	2
Law Reform .....	2	Legal Philosophy .....	2
Taxation .....	1	Penology and Criminology.....	1
Theory and Practice of Legislation..	2	Statutory Construction .....	1
Total .....	10	Thesis .....	.....
		Total .....	10

#### COMBINED COURSE IN LAW AND POLITICAL SCIENCE

Beginning with the academic year 1918-19, a combined course leading to the degree of LL. B. and B. S. in Government will be

offered. The requirements for admission are the same as those prescribed for the regular law course. The student enrolled will be under the College of Liberal Arts, in so far as subjects given in that college are concerned; as to all his other subjects, he will be under the jurisdiction of the College of Law.

### Outline of courses

[Those marked (x) are given under the political science department, College of Liberal Arts.]

#### FIRST YEAR

First semester:	Units.	Second semester:	Units.
Elementary Law .....	2	Obligations .....	6
Institutes of Civil Law.....	4	English Literature .....	x3
Persons .....	3	Public Speaking .....	2
Reading Course I.....	.....	Reading Course II.....	.....
English Literature .....	x3	European Governments .....	x3
Junior House of Representatives <sup>1</sup> ..	x.....	Junior House of Representatives <sup>1</sup> ..	x.....
Total .....	12	Total .....	14

#### SECOND YEAR

First semester:	Units:	Second semester:	Units.
Philippine Government .....	3	Mercantile Law .....	4
Property .....	4	Criminal Law .....	5
Elementary Procedure .....	2	Criminal Procedure .....	2
Oratory .....	2	Administrative Law .....	2
Oriental History <sup>2</sup> .....	x3	General Anthropology .....	x3
Reading Course III.....	.....	Reading Course IV.....	.....
Junior House of Representatives <sup>1</sup> ..	x.....	Junior House of Representatives <sup>1</sup> ..	x.....
Philippine Barristers I.....	.....	Philippine Barristers II.....	.....
Total .....	14 or 11	Total .....	16 or 13

#### THIRD YEAR.

First semester:	Units.	Second semester:	Units.
Agency .....	2	Bailments .....	2
Civil Procedure .....	5	Evidence .....	4
Private Corporations .....	2	Private Corporations .....	2
Political Parties .....	x3	Sales .....	2
Philippine Barristers III.....	.....	Social Ethics .....	x3
Reading Course V.....	.....	Economic Development of the Phil- ippines .....	x3
Practice Clubs I.....	.....	Philippine Barristers IV.....	.....
Total .....	12	Reading Course VI.....	.....
		Practice Clubs II.....	.....
		Total .....	16

#### FOURTH YEAR

First semester:	Units.	Second semester:	Units.
Land Registration and Mortgages....	3	Partnership .....	2
Public International Law .....	2	Legal Ethics .....	1
Admiralty .....	1	Constitutional Law .....	3
Torts and Damages.....	3	Wills, Descent and Administration ..	3
Municipal Government .....	x2	Taxation .....	1
Total .....	11	Diplomacy .....	x3
		Insurance .....	1
		Total .....	14

<sup>1</sup> For students holding the Associate degree, General Course. This subject is included in the preparatory law course.

<sup>2</sup> Every student must take this subject or General Anthropology.

## FIFTH YEAR

First semester:	Units.	Second semester:	Units.
Insolvency .....	1	Code Review (Crimes) .....	1
Trial Practice .....	3	Code Review (Civil Law) .....	3
Conveyancing .....	2	Code Review (Mercantile Law) .....	3
Legal Medicine .....	2	Code Review (Remedial Law) .....	3
Mining and Irrigation Law .....	1	Private International Law .....	3
Public Corporations .....	2	Public Finance .....	x3
Theory and Practice of Legislation .....	x2	Brief .....	
Brief .....		Practice Court .....	
Practice Court .....		Junior Philippine Senate .....	
Junior Philippine Senate .....		Thesis, Law .....	
Total .....	13	Thesis, Political Science .....	x
		Total .....	16

NOTE.—The regular course in B. S. in Government is finished in two years (after the Associate degree) with 66 units, 20 of which are given in the College of Law and 46 in the College of Liberal Arts. In the combined course, the student must obtain *all* the units (110) required for LL. B. and, in addition, 31 units in the College of Liberal Arts. He is thus exempted from 15 units in the College of Liberal Arts but the College of Law does not excuse him from any subject.

## VOCATIONAL COURSES

*Commercial Law.*—A special course for students taking the Course in Commerce, covering the principles and elements of contracts, agency, partnership, corporations, sale and delivery, negotiable instruments and other subject matter of commercial practice and modern business organization.

Textbooks: Huffcut-Bogert, Elements of Business Law; Commercial Code; Corporation Law.

[2 units. Associate Professor NOBLE.

*Engineering Law.*—Two courses are offered to students of the College of Engineering and others who need special instruction in engineering and architectural law.

One course in Elementary Law, designed to give a satisfactory and systematic understanding of legal terms, rights, and remedies, is given during the first semester. Outlines, principles and recitations. Textbook: Fishback, Elementary Law (Hall's Edition).

[2 units. Mr. YLAGAN.

In the second semester a course is given in the Law of Contracts, including a study of principles, forms and essentials; the law of bidding and letting; the law of employment; main features of statutes of the Philippine Islands modifying the obligations of contracts. This course is designed to furnish an appreciation of business relations and principles, and a due sense of the duties and liabilities of engineers, surveyors and architects.

Textbook: Wait, Law of Contracts for Technical Schools of Engineering and Architecture.

[2 units. Associate Professor NOBLE.

*Summary of attendance*

	1916-17	1917-18
Graduate Course .....		4
Review Course .....	29	22
Fourth-year class .....	28	33
Third-year class .....	37	24
Second-year class .....	31	46
First-year class .....	61	66
Special Students .....	15	25
Students of the other colleges taking work in the College of Law.....	16	108
Peace Officers Course .....	33	31
Total attendance .....	250	359
Duplications .....	16	41
Net attendance .....	234	318

The foregoing shows an increase of 35.9 per cent in the attendance of the present school year.

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THE UNIVERSITY OF THE PHILIPPINES

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THE FOREST SCHOOL

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EIGHTH ANNUAL ANNOUNCEMENT AND CATALOGUE

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## Calendar.

Day of week and month.	Event.
<b>FIRST SEMESTER.</b>	
1918	
Saturday, April 6 .....	Physical examination.
Monday, April 8 .....	Course in Botany I opens.
Monday, June 10 .....	School of Forestry opens.
Thursday, July 4 .....	Legal Holiday.
Tuesday, August 13 .....	Do.
Saturday, November 2 .....	First Semester ends.
<b>SECOND SEMESTER.</b>	
Monday, November 4 .....	Second Semester begins.
Thursday, November 28 .....	Legal Holiday.
Sunday, December 22 .....	Christmas vacation begins.
1919	
Wednesday, January 1 .....	Christmas vacation ends.
Thursday, January 2 .....	Exercises resumed.
Saturday, February 22 .....	Legal Holiday.
Monday to Monday, March 3 to 10 .....	Final examinations.
Thursday, March 14 .....	Graduation exercises.
Saturday, March 15 to Monday, April 14 .....	Field trip, Junior class.



## **The Forest School**

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### **OFFICERS OF ADMINISTRATION.**

IGNACIO VILLAMOR, B. A., M. A., LL. M.,  
President of the University.

ARTHUR FREDERICK FISCHER, C. E., M. F.,  
Director of Forestry.  
Dean, Forest School.

THEO. C. ZSCHOKKE, A. B., M. F.,  
Acting Chief, Division of Investigation.  
Bureau of Forestry,  
In Charge, Forest School.

## Officers of Instruction

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ARTHUR FREDERICK FISCHER, C. E., M. F.,  
Director of Forestry, Dean, Forest School, and Professor of Tropical Forestry.

.....<sup>1</sup>  
Professor of Dendrology.

.....<sup>1</sup>  
Assistant Professor of Lumbering.

THEO. C. ZSCHOKKE, B. A., M. F.,  
Acting Chief, Division of Investigation, Bureau of Forestry.  
Assistant Professor of Forest Administration.

JAMES R. GILLIS, B. S. F.,  
Assistant Professor of Forest Management.

ROSCOE B. WEAVER, B. S., M. F.,  
District Forester, South Central Luzon.  
Assistant Professor of Forest Engineering.

MAURICIO JULIAN OTEYZA, B. S. H., M. F.,  
Assistant Professor of Silviculture.

ANTONIO P. RACELIS, B. S. F., M. S. F.,  
Instructor in Forest Utilization.

EDWIN EMIL SCHNEIDER, B. L.,  
Wood Expert, Bureau of Forestry.  
Lecturer in Wood Technology.

RAFAEL MEDINA, A. B.,  
Chief, Division of Forest Lands and Maps.  
Lecturer in Engineering and Land Cases.

JOSE F. NANO, Graduate Ranger,  
Assistant in Engineering.

MAXIMO ORO, Graduate Ranger,  
Assistant in Silviculture.

CARLOS SULIT, Graduate Ranger,  
Assistant in Forest Management.  
Disbursing and Property Officer.

CALIXTO MABESA, Graduate Ranger,  
Assistant in Dendrology.

NEMESIO CATALAN, Graduate Ranger,  
Assistant in Dendrology.

PASTOR MARTELINO, Graduate Ranger,  
Assistant in Silviculture.

LUIS J. REYES, Graduate Ranger,  
Assistant in Botany.

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<sup>1</sup> Vacant.

# THE FOREST SCHOOL

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## HISTORY

A few years after the creation of the Bureau of Forestry under the American régime, there was felt the urgent need of technically trained forest rangers to carry on forest work more effectively in the Philippines, and with the end in view of filling this need, the Philippine Legislature passed in April, 1910, an Act authorizing the Director of Forestry to appoint twenty forest pensionados and to construct temporary buildings for their use. This marked the beginning of the Forest School, which was first opened to students in June, 1910. The demand for admission to the Forest School during subsequent years has so increased that the Legislature later on augmented the number of forest pensionados to be appointed each year. Since the year 1912 the Forest School has annually graduated classes of about twenty men, who have all received appointments as rangers in the Bureau of Forestry.

The Forest School was under the College of Agriculture until April 1, 1916. On February 4, 1916, Act No. 2578 was passed creating a school in the University of the Philippines to be known as the Forest School, which shall embrace all work hitherto carried on in the Forest School of the College of Agriculture of the University of the Philippines.

A new concrete school building is now completed and four new strong material cottages for the housing of the students, with a spacious mess-hall, have just been completed. These new buildings are located within the Maquiling Forest Reserve, thus making the Reserve, which embraces the entire public forest on Mount Maquiling, containing many of the principal forest types of the Philippines, available and easily accessible to the students for all kinds of field work necessary for a complete course in Forestry, with the exception of steam logging and sawmilling. For this field work each class is taken to the seat of some extensive lumbering operations. During the 1917 vacation a visit was made to the logging and lumbering plant of the Cadwallader-Gibson Lumber Company in Limay, Bataan.

The technical courses in forestry are given by instructors detailed, for the purpose, by the Bureau of Forestry. To provide for this work, the Division of Investigation of the Bureau is located at the Forest School.

#### GENERAL INFORMATION

*Admission to Forest School.*—Students who wish to enter the Forest School as forest pensionados should write to the principal of the high school in which they have received their training, requesting him to send, through regular channels, to the Director of Education a statement of the high school courses they have completed and requesting the Director of Education to forward their applications to the Director of Forestry. Notification of such action should be sent at the same time to the Director of Forestry, Manila. If their applications are approved by the Director of Education, he will certify their names to the Director of Forestry as eligible for appointment.

*Terms of Forest Pensionadoship.*—Pensionados are appointed by the Director of Forestry on the recommendation of the Director of Education. Scholarships are restricted to students who have completed the high school course. Pensionados can complete the ranger's course in two years, provided they begin their work in April and complete the first year's work in Botany by June. Holders of scholarships are under contract to enter the employ of the Bureau of Forestry for as long a period as they shall have enjoyed the privileges of the scholarship.

*Privileges of the scholarship.*—Pensionados are given appointment in the Bureau of Forestry, without civil-service examination, upon completion of the ranger's course, and those who qualify by experience are eligible for promotion. Pensionados receive a monthly allowance of ₱25 and traveling expenses to and from Los Baños. They are also provided with living quarters and with most of the books and some equipment needed in the courses.

*Private students.*—Private students are also admitted to the Forest School, provided they have completed the high-school course or its equivalent. In so far as it is feasible they will be allowed the privilege of living in the houses of the forest pensionados, free of charge, and to take part in their activities.

*Life of students.*—The forestry students have organized themselves into a club, known as the Philippine Forest Club, which among other things has control over the management of a mess. From time to time a number of student-members are elected

to manage and supervise the running of the mess. Meals in the mess hall cost approximately from ₱12 to ₱15 per month.

*Student activities.*—The Philippine Forest Club, organized by forestry students and maintained and continued by succeeding classes, holds monthly gatherings which add much to the social side of the life of the students. An orchestra composed of students has also been organized which renders the music at such social functions as the students may have. A tennis club is maintained by the forestry students and they have the privilege of partaking in the athletic activities of the University.

*Library.*—Besides a library maintained by the Bureau of Forestry which contains such forestry works as are of importance to the faculty of the Forest School and students, the American Circulating Library also assigns from time to time a considerable number of books of literary nature to the Forest School.

*Fee.*—Tuition in the School is free, except a fee of ₱5 which is charged on the presentation of the diploma. No fixed deposit is made in the Forest School, but a very small amount, as a pro-rata share, is charged to every graduating student for such mess utensils as have been lost during the year, or Bureau of Forestry property lost while in his possession.

#### *Ranger's course in forestry*

##### Junior year:

- Botany I.
- Botany 2A.
- Mathematics.
- Forest Engineering I; first semester.
- Dendrology (Forest botany).
- Physiography, soils, and climatology; first semester.
- Silviculture I; second semester.
- Forest Engineering II; summer vacation.

##### Senior year:

- Wood technology; first semester.
- History, Law, and Procedure; second semester.
- Forest Engineering III.
- Silviculture II.
- Forest Management I.

### COURSES OF INSTRUCTION

#### BOTANY

*Botany I. Elementary Botany.*—Aside from the regular laboratory work and lectures, instruction is given in the collection, preparation, and determination of vascular plants, and each student must present a herbarium. Familiarity with local ecology is acquired by frequent field trips. The lectures covering

this course are multigraphed and serve as a text. This course is especially designed for forest students.

*Botany 2A (prerequisite Botany I).*—A course designed especially for forestry students. The first half treats of the physiology of plants. The second half is devoted to the special and general anatomy of woody plants. The course is intended to serve as a foundation for the following year's work in Wood Technology.

[Junior year. Assistant Professor ZSCHOKKE. Messrs. REYES, NANO and MARTELINO.

#### MATHEMATICS

*Mathematics 3. Plane Geometry and Trigonometry.*—Students who have finished plane geometry before entering will take this course in the second semester only.

[Junior year. Assistant Professors GILLIS and WEAVER.

#### FOREST ENGINEERING

*Forest Engineering I. Elementary Surveying and Mapping.*—The use of instruments, mechanical drawing, and lettering; topographic signs; map making; field problems in pacing, chaining and compass work.

[Junior year; first semester. Assistant Professor WEAVER. Messrs. RACELIS, SULIT and NANO.

*Forest Engineering II.*—A four weeks' field trip in the forest to give drill in fundamentals of forest surveying, trail and camp construction, housing of field parties and generally to equip students to handle field parties.

[Junior year; summer term. Asst. Profs. GILLIS and WEAVER. Messrs. RACELIS and SULIT.

*Forest Engineering III.*—Lectures and recitations in engineering, mensuration, and utilization. Field practice in rough methods of leveling; plane table, topographic and boundary surveying; taking of trail notes; field sketching, etc.; camps, trail, bridge and logging-slide location; trail and bridge construction. In the month of October, the class is taken to visit the plant of some of the larger lumbering operations and given instruction in the more advanced methods of lumbering and logging. This trip will be supplemental to the utilization class work and a study of native logging on Mount Maquiling.

The field work in mensuration will be taken up in connection with forest management.

[Senior year. Assistant Professor GILLIS. Messrs. RACELIS and SULIT.

#### PHYSIOGRAPHY, SOILS, AND CLIMATOLOGY

Lectures, illustrated locally in the field, on the great factors of physical environment, and on the processes molding the land

forms which affect vegetation and soils; physiography and climatology of the Philippines.

[Junior year. Assistant Professors GILLIS and WEAVER.

#### DENDROLOGY (FOREST BOTANY)

*Prerequisite, Botany I.*—The objects of this course are: (1) To become acquainted with the common woody plants in the forest; (2) to learn to recognize the principal species of trees that are producers of timber; (3) to learn to recognize the minor forest products, medicinal, and poisonous plants; (4) to learn to recognize the more important families of woody plants by vegetative characters; and (5) to recognize broad plant groups and forest types. Frequent examinations are given, to test the students' ability to recognize the plants studied.

Bulletin No. 10, Bureau of Forestry, is the text used.

Each student is given enough drill in the making of herbarium specimens to insure his knowing how to prepare such material when on field trips.

[Junior year. Assistant Professor ZSCHOKKE. Messrs. MABESA and CATALAN.

#### SILVICULTURE I

Field work in planting and nursery work, in preparation for the work in Silviculture the following year.

[Junior year; second semester. Assistant Professor OTEYZA. Mr. ORO.

#### SILVICULTURE II

*Lectures.*—The ecological factors upon which silviculture is based. The classification of the forests of the Philippines into types. The origin and development of second-growth forests and silvicultural systems adapted to their management. Various systems of silviculture and their application to Philippine forest. Forest planting and nursery practice. Detailed consideration of the silvicultural characteristics of various timber species.

*Field work.*—Field studies in forest description. Timber marking and the preparation of silvicultural management plans. Drill in the collection, care, and germination of seed; seed testing; nursery practice; transplanting and reforestation.

[Senior year. Assistant Professor OTEYZA. Messrs. ORO and MARTELINO.

#### WOOD TECHNOLOGY

*Prerequisite Botany 2A.*—Laboratory studies of the structure of woods. Frequent examinations in the identification of different commercial woods. Attention is given to physical, chemical, and mechanical properties of wood and to the durability of different woods under varying conditions. The minor forest products also receive some attention.

[Mr. SCHNEIDER, Mr. NANO.

## HISTORY, LAW AND PROCEDURE

Lectures on the history and laws of forestry in various parts of the world and on the essentials of Philippine forest and land laws, accounting records, and forms. Practice in the use of forms and field work to illustrate the application of methods of procedure.

[Senior year; second semester. Assistant Professor ZSCHOKKE.]

## FOREST MANAGEMENT I

*Lectures.*—Working plans and the application of forest surveys to them. Forest regulation. The administration and regulation of field and office work. Organization of the local forest force for protection and for the regulation of full use and cutting under license. Organization and administration of labor for various operations. Forest valuation.

*Field work.*—The preparation of timber and topographical maps and, upon a basis of these, the preparation of a detailed working plan for a definite forest tract.

[Senior year. Assistant Professors GILLIS and WEAVER. Mr. SULIT.]

## PROPOSED HIGHER COURSE IN FORESTRY

## COURSES OF STUDY

Courses will be offered leading to the degree of Bachelor of Science in Forestry. Students who have graduated from the Philippine high schools, who have completed the ranger's course in the School of Forestry, are proficient in the use of English and Spanish, and have accomplished two years of successful field service in the Bureau of Forestry, or who have training equivalent to the above, may receive the degree of Bachelor of Science in Forestry after two years' satisfactory work in residence at the School.

The purpose of this course is to prepare eligibles for the higher grades of administrative work. Those forest officers who are to take this course will be selected by the Director of Forestry upon the basis of their training and the quality of their work in the Bureau of Forestry.

On February 15, 1917, the Board of Regents of the University approved the following outline of a course of study leading to the degree of Bachelor of Science in Forestry and authorizing the granting of the degree by the Forest School.

## FIRST YEAR

*General Physics.*—This will cover the ground usually given in a course of general physics and will also pay attention to the subject of soil physics.



*Chemistry.*—A special course designed for forestry students and dealing with the general principles of chemistry. The effort will be made to explain such special applications, as are necessary to an understanding of the subject of wood preservation and the special uses of certain forest products, as the use of certain kinds of bark in tanning and in the preparation of dye stuffs.

*Forest Zoölogy.*—A study of the beneficial and noxious animals of the forest. Game regulations and control. Forest protection—such phases as are not handled in Botany I and III.

*Silviculture IV.*—Special silvicultural systems and silviculture as applied to particular species. Training in handling planting projects for the production of firewood, timber, and other forest products.

#### SECOND YEAR

*Lumbering.*—This course covers all the field operations of the licensee and includes what is frequently called logging engineering.

*Utilization.*—A course dealing with the handling of forest products after they leave the forest. It covers mill work, scaling, and grading of lumber, special uses of other products, and the study of markets.

*Forest Management II.*—History and development of the forest service in the Philippines, and a comparative study of the systems of forest administration in use in other countries.

*Thesis.*—Each student will be required to submit a thesis in one of the above subjects, showing the investigation of some special problem during, at least, one year's work. Thesis subjects will be arranged with the head of the department not later than the beginning of the second semester of the first year.

*Forestry Seminar.*—All students in the advanced course will be expected to attend the weekly or biweekly conferences of the department. These conferences will take up current progress in forestry, reviews of special articles, and reports on new work.

#### *Summary of enrollment of the Forest School during the academic year 1917-18.*

Seniors .....	20
Juniors .....	23
Total .....	43



THE UNIVERSITY OF THE PHILIPPINES

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CONSERVATORY OF MUSIC

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Conservatory Building, 963 R. Hidalgo, Quiapo, Manila.



## **Faculty of the Conservatory of Music**

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**IGNACIO VILLAMOR, B. A., M. A., LL. M.,**  
President of the University.

**WALLACE W. GEORGE,**  
Director and Dean of Conservatory of Music, Professor of Voice.

**FERNANDO CANON, Jr.,**  
Assistant Instructor in Guitar.

**HARRIET L. MARBLE,**  
Instructor in Voice.

**GUY F. HARRISON,**  
Instructor of Organ—Harmony—Counter Point—Musical History—Solfeggio.

**FRANCISCO SANTIAGO,**  
Instructor of Piano—Composition.

**EMILIA SERVOSA DE GUZMAN,**  
Instructor of Piano—Composition.

**CAYETANO JACOBE,**  
Instructor of Violin—Viola—Cello—Wind Instruments—Composition.

**PEDRO ELORIAGA,**  
Instructor of Piano.

**MINNIE A. HERSCHLER,**  
Assistant Instructor in Voice and Languages.

**TERESO ZAPATA,**  
Instructor in Violin.

**LUCIA FRANCISCO,**  
Assistant Instructor in Piano.

**ELISA MAFFEI,**  
Assistant Instructor in Piano.

**CONCHITA CRUZ HERRERA,**  
Assistant Instructor in Piano.

**NICANOR ABELARDO,**  
Assistant Instructor in Harmony and Solfeggio.



## CONSERVATORY OF MUSIC

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This department was established by an Act of the Third Philippine Legislature, February 4, 1916, which appropriated a certain sum of money "for the establishment and maintenance of a Conservatory of Music."

It is primarily the aim of the Conservatory of Music to educate pupils who desire to make a serious study of music with a view to a professional career in some branch of the art. The Conservatory, therefore, so arranges its curriculum that all pupils in its regular courses who are studying to be teachers, singers or performers on any instrument, shall pursue those theoretical branches which are necessary in their particular class together with their general instrumental or vocal practice.

There are two distinct courses of study offered under the supervision of the Director. First, special course, or general musical instruction; second, a regular course leading to a diploma or degree.

### SPECIAL COURSE

This course is open to any person wishing to study music, but not desiring to graduate. No previous knowledge of music is required to enter the special course and the student may take any one or as many studies as are desired. This course affords a splendid opportunity to test one's musical talents, to secure a general knowledge of music, and possibly to lay the foundation for advanced study.

### REGULAR COURSE LEADING TO DIPLOMA OR DEGREE

This course is open to any person who is qualified to pursue advanced studies. It furnishes the necessary training for entrance into professional life, although it is not restricted to studies having such an end in view.

The regular course embraces four years and is divided into four grades. Elementary, intermediate, advanced, and seniors.

### EXAMINATIONS

General examinations of all pupils are held at the end of each half year; the first by the members of the faculty in each department, the second by the Director.

A careful record of the progress of each pupil is kept, and, together with the examinations, determines the standing of the pupil for promotion or graduation.

#### FEES

The tuition fee for regular students in the Conservatory of Music is ₦15 a semester. Special students shall pay a fee of ₦12 a month, for which they may not receive more than two hours of instruction a week.

#### GRADE EXAMINATIONS

##### ELEMENTARY GRADE

Before being promoted from this grade, the student must pass a written examination on the rudiments of music, solfeggio, and ear training and perform the required exercises in a given tempo.

##### INTERMEDIATE GRADE

Before being promoted from this grade, students must pass a written examination on terminology, also have finished musical history and first year harmony combined with examinations in solfeggio, dictation, and exercises in a given tempo.

##### ADVANCED GRADE

Before being promoted from this grade to the senior class, the student is required to play or sing all forms of scales, arpeggios, and other technical exercises in a given tempo, have finished the musical theory course and second year harmony and also examinations in solfeggio and dictation, and show a repertoire of pieces studies equivalent to three-quarters of the entire course.

#### EXAMINATIONS FOR GRADUATION

Candidates for graduation must pass a separate examination in solfeggio and dictation, sight playing and harmony, before their demonstrative examination which will consist of a piece to be played or sung after one week's study, and a piece of their own selection to be played from memory.

#### PIANOFORTE COURSE

The pianoforte course is designed to equip the student for a career as soloist or teacher, or both, and diplomas or degrees are granted accordingly.

All students in the regular course are required to attend the solfeggio class during their entire course, or until they can pass the final examinations. They are also required to attend the



classes in sight playing, also the ensemble class during their graduating year, and to practice and perform concertos when prepared.

All full-course students preparing to teach who enter below the advanced grade are required to take the normal course when prepared to do so.

In the soloists' course, students are required to perform at least once with the ensemble class and to give one public recital.

This is not required of students in the teachers' course.

The theoretical studies required for graduation are: Solfeggio, musical theory, harmony, simple counterpoint, and analysis, lectures on orchestral instruments, lectures on English literature. In order that students may form a comprehensive idea of the literature of the pianoforte course, they are required to have studied repertoire averaging three pieces each by the following composers: Bach, Handel or Scarlatti, Mozart, Haydn or Clementi, Beethoven, Schubert or Weber, Schumann or Mendelssohn, Chopin, Liszt. Modern Composers.

#### OUTLINE OF PIANOFORTE

##### PRACTICAL

##### FIRST AND SECOND YEARS

New England Conservatory Course, grades 1, 2, and 3. Finger exercises, scales, studies, etc. Sonatinas and pieces by Kullaw, Kullack, Clementi, etc. Hand culture, notation, ear training.

##### THIRD YEAR

All forms of technical exercises, scales, arpeggios, double thirds, octaves. Studies by Czerny, Cramer, Clementi. Pieces by Mozart, Hadyn, Bach, Schumann, Beethoven, etc.

Sight playing, ensemble class, normal.

##### FOURTH YEAR

Studies by Clementi, Chopin, Henselt, Liszt. Pieces and concertos by Bach, Beethoven, Chopin, Schumann, and modern composers.

Sight playing, ensemble class, normal, accompanying.

##### THEORETICAL

##### FIRST AND SECOND YEARS

Solfeggio, ear training and dictation.

Musical history.

Harmony.

## THIRD YEAR

Solfeggio and dictation.  
Harmony.  
Theory.

## FOURTH YEAR

Solfeggio and dictation.  
Harmony or analysis.

## THE ORGAN DEPARTMENT

The completion of the preparatory grade in pianoforte course, or its equivalent, is required before beginning the study of the organ. The organ course is designed to provide a thorough and complete education as a church organist and choir master, also for advanced pupils there is added to the above complete preparation as a concert performer. The theoretical studies required for graduation are: Solfeggio, ear training and dictation, musical theory, harmony and analysis, and simple counterpoint. In addition to the above the student is required to attend the lectures on musical history, orchestral instruments, organ construction, and English literature; also the course in choir training and accompanying.

Advanced students receive instruction in orchestral score, reading and actual practice in playing upon the organ the wind part of orchestral scores.

## COURSE IN CHOIR TRAINING AND CHURCH PLAYING

This department has been organized as to add actual practice and experience to most thorough instruction in choir training and service playing. The work is divided between classes for practical work and lectures. In the former, instruction is given in the accompaniment of Anglican and Gregorian chants, of hymns and anthems, and special attention is given to improvisations in all forms of preludes, interludes, and postludes.

A course of lectures is given on the Musical Liturgy of the Protestant Episcopal Church, its history and evolution and its correct performance.

A mixed choir is annually organized and used in the regular college services, and the advanced students may have the privilege of training this choir for the practical experience to be gained in the performance of every form of Protestant church music.

## THE ORGAN DEPARTMENT COURSE OF PLAIN SONG ACCOMPANIMENT

This course is designed thoroughly to acquaint the student with the history and theory of plain song and with the proper manner

of its performance; also to fit him intelligently and correctly to accompany it upon the organ in its every form.

The authoritative position occupied by plain song in the ritual of the Roman Catholic Church, and the growing interest in its revival in the Anglican Church, render the study of such a course as this of the highest importance to all organists.

#### OUTLINE OF COURSE THEORETICAL

The theory of plain song; the character of its rhythm and its notation. The Ecclesiastical modes. The Gregorian tones; their use in Psalms, Canticles, and Introits. Antiphons and hymn melodies (including the *Te Deum*).

The plain song of the mass.

#### PRACTICAL WORK

Sight reading of plain song melodies. The pointing of Psalms and Canticles.

Accompaniment—

Of scales and cadences in the Ecclesiastical modes.

Of Psalms and canticles.

Of antiphons and hymns.

Of the mass.

#### OUTLINE OF ORGAN COURSE

##### PRACTICAL

##### FIRST AND SECOND YEARS

Study of exercises in three and four parts for the hands alone, exercises in pedal practice, short pieces combining the two. Study of the smaller organ trios and pieces.

##### THIRD YEAR

Special exercises in pedal playing. Bach's little preludes and fugues. The four voiced choral, transposition. A study of the construction of the organ. Compositions for church service and concert performance, improvisation.

##### FOURTH YEAR

Advanced course of organ compositions of all schools. Concertos, score reading and plain song accompaniment. This grade is devoted to preparing the student to occupy a position as church or concert organist.

#### THEORETICAL

##### FIRST AND SECOND YEARS

Solfeggio, ear training and dictation.

Harmony.

Musical History.

## THIRD YEAR

Solfeggio and dictation.

Harmony and analysis.

Theory.

Lectures, orchestral instruments, organ construction, Episcopal church music.

## FOURTH YEAR

Solfeggio and dictation.

Counterpoint.

Lectures.

## VOICE COURSE

The regular course in voice is constructed to fit the graduate for a career as soloist or teacher and the theoretical studies, languages, etc., are required with the regular voice course in order to attain the desired result.

Special students are not required to take the theoretical course with the exception of solfeggio, and this study must be taken up simultaneously with the voice by both special and regular students.

The branch studies required of the regular voice student are: Languages, Italian, French, German.

Solfeggio (special course for vocalists), sight reading, choir practice (Episcopal service, etc.), chorus.

Pianoforte (secondary).

Theory, harmony (special course for vocalists), general theory, musical history normal lectures, teaching, and chorus.

## OUTLINE OF VOICE COURSE

## FULL COURSE FOR GRADUATION

## FIRST YEAR

Voice.....	One hour weekly.
Diction, Italian.....	Two lessons weekly.
Pianoforte (secondary).....	One lesson weekly.
Solfeggio and dictation.....	One hour weekly.
Musical history.....	One hour weekly.

## SECOND YEAR

Voice.....	One hour weekly.
Diction, French.....	Two lessons weekly.
Languages, Italian.....	Two lessons weekly.
Pianoforte (secondary).....	One hour weekly.
Solfeggio (sight reading).....	One hour weekly.
Harmony.....	Two hours weekly.
Musical theory.....	Two hours weekly.
Normal Lectures.....	One hour weekly.
Chorus.....	One hour weekly.

## THIRD YEAR

Voice.....	One hour weekly.
Diction, German.....	Two lessons weekly.
Languages, French.....	Two lessons weekly.
Pianoforte (secondary).....	One lesson weekly.
Solfeggio (advance).....	One lesson weekly.
Harmony.....	Two hours weekly.
Normal teaching.....	One hour weekly.
Chorus.....	One hour weekly.

## FOURTH YEAR

Voice.....	One hour weekly.
Languages.....	Italian, French, German.
Pianoforte (secondary).....	One lesson weekly.
Solfeggio, advanced sight singing, vocal ensemble music.....	One hour weekly.
Normal teaching.....	One hour weekly.
Chorus.....	One hour weekly.

## THE NORMAL VOCAL AND PIANO COURSE

This department (which is included in the regular vocal and piano course and is practically free) is for the purpose of fitting the student for the best possible standard for teaching. It gives a wide experience in both theory and practice.

The work comprises the last two years of the graduation course.

The normal course comprises weekly lectures for a year on vocal physiology, philosophy of voice and vocal method, preparatory to one year's practice in teaching under the supervision of an experienced instructor, who assists the normal teachers by personal attendance at their classes, giving suggestions and criticisms.

Weekly teachers' meetings are held where ideas are compared and examples given under the direction of a competent instructor. The pianoforte normal teachers meet in a similar way for consultation and advice, thus saving invaluable time and being many times better equipped for the work for which they are being prepared.

## ORCHESTRAL INSTRUMENTS

As in the case of the pianoforte, the regular course for graduation in violin and other stringed instruments consist of two parallel branches to be taken simultaneously.

A special course for the acquisition of technique and study of repertoire and general course in harmony, analysis, theory, sight playing, musical history and orchestral practice.

All advanced pupils must attend the class in violin sight playing. Students of regular course are required to demonstrate ability on piano equivalent (as secondary study) to two years' instruction and pass an examination as to ability as an accompanist.

Juvenile pupils not in possession of a pianoforte should at least receive an adequate training in all rudiments of music, such as rythm, names of tones, intervals, staff notation, etc., before beginning violin study.

## VIOLIN COURSE

### PRACTICAL

#### *Preparatory and intermediate*

#### FIRST AND SECOND YEARS

Manner of holding violin and bow. Easy exercises in bowing and fingering. Technical exercises. Major and minor scales, first to third position. Selections from the violin school of Dorn.

#### THIRD YEAR

Major and minor scales and arpeggios in all positions. Studies by Allard, Kreutzer, Rode. Concert pieces and ensemble playing. Sight playing.

#### FOURTH YEAR

Violin schools of David, Spohr. Studies by Kreutzer and Rode. Concertos by Moz, Beethoven, Mendelssohn, Paganini, St. Saens, De Beriot, etc.

#### FIRST AND SECOND YEARS.

Solfeggio, ear training, and dictation.

Harmony.

English literature.

#### THIRD YEAR

Solfeggio, dictation.

Musical history.

Harmony.

Theory.

Lectures on orchestral instruments.

#### FOURTH YEAR

Solfeggio.

Harmony and analysis.

Orchestral score reading.

## OTHER ORCHESTRAL INSTRUMENTS

The course in all other orchestral stringed instruments is based on the violin course and the theoretical studies are the same.

## WIND AND OTHER INSTRUMENTS

The classes in wind instruments offer special advantages to students. Those who are sufficiently advanced are permitted to play in ensemble and are coached by their teachers during rehearsals thus gaining invaluable experience in orchestral routine.

The course of study for the various wind instruments corresponds in general with that of stringed instruments.

Candidates for graduation in this department must have completed the intermediate grade of the piano course, history of music, English literature, harmony, analysis and theory, the same as for violin.

## GENERAL THEORY

This is a very comprehensive course in general musical knowledge, and embraces a study of all the important laws underlying the art and science of music. It aims to give the student, in a comparatively brief time that musical culture which is acquired by the teacher only after years of experiment and practical experience.

There are many points of musical study which it is impossible to touch upon during the time of technical study. The teacher may explain how a certain embellishment is to be played, but he certainly cannot pause in his lesson and explain all the rules governing embellishment, unable to give a full explanation of sonata form due to his lack of time.

The course begins with the laws governing rhythms, accents, notation, natural and artificial groupings, embellishments, accidentals, metronomization, tempo marks, pedaling, fingering, and other technical points of the science of music, are next studied in their practical application.

A study of musical forms now follows; the simple song forms are examined and analyzed; a knowledge of figure treatment as used by Beethoven and Bach on the one hand and Wagner on the other is acquired.

The different forms of scales used by composers in different countries or epochs are studied, not with a view to composition, but in order that they may be recognized by the future teacher. Sonata forms of different epochs, but chiefly those of Mozart and Beethoven, are dissected and explained.

The vocal forms are also analyzed, the application of the strophe and the art song forms being prominent here.

Meters and matrical construction are taught, beginning with hymn meters and continuing to the larger forms.

The connection between the meter of poetry and that of music and the laws governing the combination of word and tone are studied.

The contrapuntal forms are next taken up and a recognition of double and triple counterpoint acquired. The canonic forms are reviewed.

Finally the flower of counterpoint, the fugue, is analyzed and a thorough examination of "the well-tempered clavichord" concludes the regular course of theory, which is far more practical than its name might indicate. A more advanced course, in connection with the class in musical journalism, takes up a knowledge of scores, schools of execution and composition, musical aesthetics, etc.

#### COURSE IN COMPOSITION

Students in this course must pass examinations in solfeggio, dictation, and elementary pianoforte. Before being promoted to a more advanced grade, the students must pass examinations on studies of preceding grade. All lessons are given in classes unless otherwise stated.

##### FIRST YEAR

Harmony and theory.

##### SECOND YEAR

Simple counterpoint and imitation strict and free, in two, three, four, five, six and eight voices (one year).

Free compositions in all the smaller vocal and instrumental forms (one year).

(a) Counterpoint and composition.

(b) Counterpoint.

Composition.

##### THIRD YEAR

(c) Double counterpoint, canon, gigue (one year).

(d) Free composition in the larger forms (one session).

Instrumentation (one session).

##### FOURTH YEAR

Instrumentation, score reading and playing.

Instrumentation.

Conducting.

Composition.



### SOLFEGGIO AND SIGHT READING COURSES

The courses in Solfeggio (vocal sight reading) and in Pianoforte Violin sight playing are provided to meet the needs of all pupils deficient in the fundamental principles of music, such as rhythms, intervals, scales, etc., and who are unable to read vocal or instrumental music at sight.

The pupils are trained to write, in correct notation, musical phrases which are played or sung to them, beginning with the simplest phrase in the major mode, and progressing until difficult melodies in either major or minor can be notated with ease and facility.

The sight singing begins with the simplest intervals and rhythms, progressing by easy stages until it includes the most difficult passages to be found in modern music. The lamentable lack on the part of the vast majority of vocalists should commend the solfeggio course to all who are ambitious to succeed as singers, even though they may not intend to take the full course and graduate.

What the eye is to the artist, the ear is to the musician. Although this would seem to be self-evident there are many who elect to study music apparently without the slightest appreciation of this important truth.

Proficiency in advanced sight singing, and in pianoforte and violin sight playing is strictly insisted upon before graduation from the respective departments. Pupils in the regular courses of the Conservatory are required to pursue the study of solfeggio during the entire course.

### MUSICAL HISTORY

All regular students are required to take the musical history course, which consists of one hour lecture, once each week, during the school year.

Special students may also take this course if they desire.

Notes will be taken at each lecture by the student and examinations held at the close of each term.

This course will include:

1. Genealogy of Music.
2. Earliest Christian Music.
3. The Beginning of Composition.
4. The Development of Notation.
5. Troubadours and Trouveres.
6. Minne and Mastersingers.
7. The Flemish School.
8. The Old Italian School.
9. The Opera in the time of Gluck and Great Epochs in Musical History.

10. History of singing and singers.
11. Development of Organ and Pianoforte.
12. Oratorio and religious music from Luther to Scheidt.
13. Bach and Handel.
14. Pianoforte and instrumental music to Philipp Em. Bach.
15. Development of music in England.
16. Franz Josef Haydn.
17. Wolfgang Amadeus Mozart.
18. L. Von Beethoven.
19. Schubert and the Lied.
20. Frederick Chopin.
21. Mendelssohn.
22. Robert Schumann.
23. Development of Opera from Gluck.
24. Richard Wagner and his theories.
25. Instrumental Development and Modern Virtuosi.
26. Musical influences of the present.

#### CONDUCTING

The Conservatory has a department for training the student in the art of conducting.

The following is a brief outline of the course:

1. Beating time.
2. Score reading and sight singing.
3. Practical conducting for chorus.

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THE UNIVERSITY OF THE PHILIPPINES

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THE SCHOOL OF FINE ARTS

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EIGHTH ANNUAL CATALOGUE

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## **Faculty of the School of Fine Arts**

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**RAFAEL ENRIQUEZ,**  
Dean of the School of Fine Arts and Instructor in Color and Composition.

**MIGUEL ZARAGOZA,**  
Instructor in Anatomy.

**JOSE MARIA ASUNCION,**  
Secretary of the School of Fine Arts and Instructor in the History of Art.

**FERNANDO C. AMORSOLO,**  
Instructor in Landscape and Drawing from Life.

**HENRY LEVY,**  
Instructor in Engraving.

**VICENTE FRANCISCO,**  
Instructor in Sculpture and Molding.

**VICENTE RIVERA Y MIR,**  
Instructor in Drawing.

**FABIAN DE LA ROSA,**  
Instructor in Decorative Art.

**TEODORO BUENAVENTURA,**  
Instructor in Elementary Drawing.

**RAMON PERALTA,**  
Instructor in Elementary Drawing.



## SCHOOL OF FINE ARTS

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The School of Fine Arts was established by authority of Act No. 1870, founding the University of the Philippines, which was enacted by the First Philippine Legislature on June 18, 1908. The first session of this school began in June, 1909. The building is situated at No. 931 Calle R. Hidalgo, in Quiapo district of the city of Manila.

The School of Fine Arts has as its chief purpose the teaching and development of the graphic and plastic arts in their various and manifold branches. An effort is made also to exert an influence toward the advancement and refinement of those industrial trades which are of an artistic nature; such as gold and silver work, ceramics, embroidery, lace-making, furniture-making, and metal work.

### INSTRUCTION

The school offers courses of instruction in painting, in sculpture, and in engraving. No tuition fee is charged.

### OUTLINE OF COURSES

#### FIRST COURSE

##### PAINTING

*First year.*—Elementary drawing: figures, landscape and decoration.

*Second year.*—Drawing from antique statuary and drapery; perspective.

*Third year.*—Drawing from antique statuary; anatomy and anthropology in their artistic aspects; elementary decorative painting.

*Fourth year.*—Advanced landscape; advanced decorative painting and original designing; theory and history of art and a study of ancient apparel; drawing from life.

*Fifth year.*—Coloring and original designing; drawing from life.

#### SECOND COURSE

##### SCULPTURE

*First year.*—Elementary drawing: figures, landscape, and decoration; elementary modeling.

*Second year.*—Drawing and modeling from antique statuary and drapery; perspective.

*Third year.*—Modeling and molding from antique statuary

and drapery; anatomy and anthropology in their artistic aspects; drawing from life.

*Fourth year.*—Modeling and molding from life; theory and history of art and a study of ancient apparel; drawing from life.

*Fifth year.*—Modeling and molding from life and original designing; drawing from life.

### THIRD COURSE

#### ENGRAVING

*First year.*—Elementary drawing: figures, landscape, and decoration; the elements of engraving.

*Second year.*—Pen-and-ink sketching; drawing from antique statuary; perspective; modeling in wax.

*Third year.*—Engraving of incised and relief designs; drawing from antique statuary; anatomy and anthropology in their artistic aspects; modeling in wax; drawing from life.

*Fourth year.*—Engraving of incised and relief designs; modeling in wax; drawing from life; theory and history of art and a study of ancient apparel; etching.

*Fifth year.*—Engraving of incised and relief designs; modeling in wax and original designing; the use of machines.

#### REQUIREMENTS FOR ADMISSION

Students are admitted by competitive examination as vacancies occur. A limited number of elementary students who show marked proficiency in drawing are admitted. For further particulars apply to the Dean.

Beginning with the school year 1918-19 no new student shall be admitted who has not finished studies or courses equal to those taught in the intermediate grades of the public schools.

#### EXAMINATIONS AND PRIZES

Three days before the close of each school year there will be an exhibition of the work done by the pupils which, in the opinion of the instructors of this school, deserves to be exhibited. Prizes will be awarded, and the qualifications of each pupil will be determined by various committees of instructors, appointed for this purpose. Each committee is composed of the instructor of the class whose work is to be judged, and two others who are appointed to assist him with their advice; these constitute the board to determine the qualifications and to award the prizes. In each class there will be given as prizes a bronze medal with appropriate diploma, and two certificates of honorable mention. In addition, a certificate of merit is given, instead of the medal, to any pupil who has previously been awarded a medal in the



same class; provided of course that the character of his work again deserves this distinction.

All work for which the pupils are awarded prizes shall become the property of the school.

#### RECORDS AND CERTIFICATES

At the end of each year those pupils who request it will be given a record of the studies which they have completed during the year, showing the proficiency which they have acquired.

Those pupils who complete satisfactorily the five years' work as outlined for any one of the courses which are given in this school, will be entitled to receive a diploma or a certificate of proficiency.

#### HOURS OF INSTRUCTION

Subjects.	Hours.	Instructor.	Day.
Elementary drawing	8 to 9 a. m	Henry Levy	Monday to Friday inclusive.
	10 to 12 a. m	Fabian de la Rosa	
	3 to 4 p. m	Miguel Zaragoza	
	4 to 6 p. m	Ramon Peralta	
		Vicente Rivera and Teodoro Buenaventura.	
Drawing from the antique	6 to 8 p. m	Henry Levy	Do.
	8 to 10 a. m	Teodoro Buenaventura.	
Advanced landscape	6 to 8 p. m	Vicente Rivera	Do.
Drawing from life	4 to 6 p. m	Fernando C. Amoroso.	
Drawing from life in oil	6 to 8 p. m		Do.
Decorative painting	10 to 12 a. m	Rafael Enriquez	Do.
Modeling and molding	8 to 10 a. m	Fabian de la Rosa	Do.
Engraving	8 to 12 a. m	Vicente Francisco	Do.
Anatomy	4 to 6 p. m	Henry Levy	Do.
Perspective	2 to 3 p. m	Miguel Zaragoza	Do.
History of art	3 to 4 p. m	José Ma. Asunción	Tuesday and Thursday.
		José Ma. Asunción	Monday, Wednesday, and Friday.

The office of the Secretary of the School of Fine Arts will be open every working day during the school year from 4 to 6 p. m. to transact any business connected with the administration of the school.

#### NUMBER OF PUPILS.

The number of pupils who matriculate in each school year varies from 500 to 900.

The total enrollment of students during the academic year 1917-18 is 699.



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